1998

Secured Lending as a Zero-Sum Game

David Gray Carlson
Benjamin N. Cardozo School of Law, dcarlson@yu.edu

ARTICLES

SECURED LENDING AS A ZERO-SUM GAME

*David Gray Carlson**

ABSTRACT

This Article claims that law and economics literature made a profound mistake when it tried to adapt the Modigliani-Miller irrelevance hypothesis—famous in corporate finance theory—to the question of why it pays a debtor to issue secured debt as well as unsecured debt. The literature that is criticized claims that lending is a zero-sum game. If the debtor saves money from the secured loan, the debtor simply pays more later to an unsecured claim. Some "disturbing cause" must exist to disrupt the zero-sum game and render security interests rational for the debtor. The author rigorously shows, however, that the zero-sum quality of secured lending is true only in a Ponzi scheme. The zero-sum game can exist only when the debtor is required (by assumption) to borrow beyond the amount of collateral. Thus, the law and economics literature purports to model credit markets, but it succeeds only in modeling perpetual Ponzi schemes.

* Professor of Law, Benjamin N. Cardozo School of Law, Yeshiva University. This Article has benefited from suggestions by Susan Block-Lieb, James Bowers, Bill Bratton, Charles H.S. Chapman, Lawrence A. Cunningham, Zohar Goshen, Michael Herz, Jon Heiner, Arthur Jacobson, John O. McGinnis, Melanie Meyers, Tom Plank, Jeanne Schroeder, Paul Shupack, Stewart Sterk, Allan Vestal, Jack Williams, and Charles M. Yablon, and from presentations at law schools at the University of Virginia and Washington & Lee University.

INTRODUCTION

Economic theory often gravitates toward the norm of freedom of contract and against the norm of government intervention into markets. Yet, strangely, when it comes to debtor-creditor law, economists have been most ambivalent about freedom of contract. Specifically, they doubt that the institution of secured lending is efficient.

Much of the economic literature maintains that lending is subject to a law of conservation of risk. In this account, lending is

a zero-sum game. Thus, if security eliminates risk for C_1, then the risk must be visited on C_2, an unsecured creditor. To be sure, if C_2 has perfect knowledge, C_2 will respond to C_1's mortgage by raising the price of unsecured credit. Thus, any gain obtained from C_1 is simply offset by C_2's higher price. Under such a condition—so the standard account goes—secured credit rises to the level of being irrelevant to the debtor or, given transaction costs, irrational.

On the other hand, if information asymmetries exist, or if C_2 is an involuntary creditor unable to recover the true risk premium from a debtor, then the debtor has a rational reason to borrow on a secured basis: the debtor can borrow on a secured basis from C_1 and export risk to C_2. If this is all security interests signify, they are inefficient and should be abolished or, as recent commentators would have it, heavily taxed in order to restore proper incentives.[1]

It is deeply disturbing to economists that the rationality of an institution as enduring as that of secured lending should rest upon so leprous a foundation as theft or fraud. Accordingly, on the residual assumption that secured lending is a zero-sum game, economists have engaged in a twenty-year search for the normatively acceptable cause that disturbs the law of conservation of risk, so that security interests are rational for reasons other than exportation of costs. "Like Cinderella's sisters, they began offering their own theories in the hope that they would fit the glass slipper."[2]

The zero-sum baseline from which most of the economic literature departs can be traced to the introduction of the famous Modigliani-Miller irrelevance hypothesis.[3] Introduced in an important Article by Thomas Jackson and Anthony Kronman,[4] it has been uncritically accepted by nearly all other commentators. As recently as 1996, the irrelevance hypothesis has served as the foundation of an ambitious claim that secured credit is founded upon exporting costs to uncompensated third parties.[5]

---

1 *See* Lucian Arye Bebchuk & Jesse M. Fried, *The Uneasy Case for the Priority of Secured Claims in Bankruptcy*, 105 YALE L.J. 857, 904-13 (1996); *see also* John Hudson, *The Case Against Secured Lending*, 15 INT'L REV. L. & ECON. 47, 52-53 (1995).

2 Lynn M. LoPucki, *The Unsecured Creditor's Bargain*, 80 VA. L. REV. 1887, 1894 (1994).

3 *See* Franco Modigliani & Merton H. Miller, *The Cost of Capital, Corporation Finance and the Theory of Investment*, 48 AM. ECON. REV. 261 (1958).

4 *See* Thomas H. Jackson & Anthony T. Kronman, *Secured Financing and Priorities Among Creditors*, 88 YALE L.J. 1143 (1979).

5 *See* Bebchuk & Fried, *supra* note 1. For other recent endorsements of the irrelevance hypothesis, see Christopher W. Frost, *Asset Securitization and Corporate Risk Allocation*, 72 TUL. L. REV. 101 (1997); Robert K. Rasmussen, *An Essay on Optimal Bank-*

In the long history of this literature, only one scholar—Homer Kripke, a self-avowed non-economist—openly questioned the wisdom of this reliance on the Modigliani-Miller irrelevance hypothesis.[6] For his trouble, Kripke was savagely attacked by economists who went so far as to suggest that Kripke was "intellectually handicapped" for even questioning the relevance of Modigliani-Miller irrelevance.[7]

This Article will completely vindicate Kripke's intuition that the Modigliani-Miller hypothesis is the wrong baseline from which to start. Indeed, it is the Modigliani-Miller thesis—grievously misapplied to credit markets—that constitutes the intellectual handi-

---

ruptcy Rules and Social Justice, 1994 U. ILL. L. REV. 1, 22; Alan Schwartz, *Taking the Analysis of Security Seriously*, 80 VA. L. REV. 2073, 2079-80 (1994) (asserting the continuation of the Modigliani-Miller "puzzle"). According to Dean Robert Scott:

> The preceding discussion underscores the critical importance of the efficiency debate that has dominated the theoretical scholarship on secured financing over the past fifteen years. The debate may not have established a general theory of secured debt, but it has at least served to explode the conventional wisdom that has long supported the Article 9 scheme—the wisdom that, on its face, secured credit serves to lower the interest rate for debtors. The irrelevance theorem suggests that, without other explanations, any gains to secured creditors are offset by losses to other creditors. In turn, the anticipation of losses by unsecured creditors will be reflected in higher interest rates charges that presumably will erase any benefits derived from the lower rates charged by secured creditors.

Robert E. Scott, *The Politics of Article 9*, 80 VA. L. REV. 1783, 1802 (1994). Dean Scott has made a more recent statement on the efficiency of secured lending, in which the Modigliani-Miller thesis nowhere appears. Instead, second-best concerns (i.e., empirical burdens that will prevent detection of efficient policy) and public choice concerns are emphasized. These two concerns, however, are contradictory. Unless one can identify optimal programs, there is no sense in worrying about the "distortive" effects of self-interest in the legislative process. *See* Robert E. Scott, *The Truth About Secured Financing*, 82 CORNELL L. REV. 1436 (1997) [hereinafter Scott, *The Truth*].

6 *See* Homer Kripke, *Law and Economics: Measuring the Economic Efficiency of Commercial Law in a Vacuum of Fact*, 133 U. PA. L. REV. 929 (1985).

7 Thomas Jackson and Alan Schwartz wrote as follows in response to Kripke:

> The novelty of Professor Kripke's entrance into the security interest debate lies in his claim that security interest problems should be analyzed with the tools and evidence available to practicing lawyers. It is doubtful whether practicing lawyers are as badly handicapped in performing intellectual tasks as he asserts, but it is easy to see that Kripke's methodology is utterly bereft of serious intellectual support. No one could get a challenging problem of social policy right using Kripke's approach.... Kripke's unfortunate failure to take the theoretical literature seriously has prevented him from using his vast experience to shed real light on the issues he addresses.

Thomas H. Jackson & Alan Schwartz, *Vacuum of Fact or Vacuous Theory: A Reply to Professor Kripke*, 133 U. PA. L. REV. 987, 1001 (1985); *see also* Douglas G. Baird, *The Importance of Priority*, 82 CORNELL L. REV. 1420, 1422 n.4 (1997) ("Arguments against the Modigliani-Miller indifference propositions that have long since disappeared from the economic literature retain respectability in law reviews.") (citing Kripke, *supra* note 6).

cap.

In order to demonstrate that an economic theory of secured lending need not be placed within the domain of zero-sum games, Part I of this Article briefly shows on familiar and time-honored grounds that security interests are at least capable of being efficient.[8] This is something that the zero-sum models have been unable to achieve. In fact, the efficiency of secured lending is very easy to theorize if only the zero-sum premise is abandoned.

The Modigliani-Miller irrelevance hypothesis is considered in Part II. This hypothesis holds that, in a world without transaction costs and income taxes, debt-equity ratios are irrelevant to the value of the firm. The irrelevance hypothesis is justly celebrated as a great contribution to the field of financial economics. My point is certainly not to criticize it in the domain for which it was intended. Rather, my point is that strict adherence to the boundaries of the irrelevance hypothesis should have revealed that it cannot be exported into the analysis of secured credit. Accordingly, Part II of this Article discusses the parameters and logical entailments of the Modigliani-Miller model. It will demonstrate that, in this model as originally promulgated, borrowing is strictly limited to the value of equity. This demonstration is important because it contradicts the secured lending models, which universally require a surfeit of debt and a shortage of collateral.

Part III examines the metaphysical baggage of importing the Modigliani-Miller baseline into the market for risky credit. The logical premises are fantastic and implausible, and for this reason they are always hidden or unacknowledged in the literature.[9] Because these premises are embedded firmly in the foundations of the zero-sum models, their existence cannot be denied. Yet, to state these premises is scandalous because it is hard to believe that any serious scholar could be wed to them. But wed to them they are—though always by implication and never expressly.

According to the assumptions implied by the zero-sum baseline, all debtors are insolvent. Debtors always steal loan proceeds. Creditors are indifferent to these thefts because they always receive a premium to cover the risk of loss. The risk of loss to creditors is less than 100% because debtors can always refinance debt with new credit, which they can always obtain by promising a large

---

[8] The details of this theory are set forth in David Gray Carlson, *On the Efficiency of Secured Lending*, 80 VA. L. REV. 2179 (1994).

[9] The salient exception is Paul M. Shupack, *Solving the Puzzle of Secured Transactions*, 41 RUTGERS L. REV. 1067 (1989).

enough risk premium to cover future losses.

In short, these models have confounded credit markets with Ponzi schemes. Starting in 1979 and carrying right on through to 1997, economic analysis in the law reviews has forwarded policy recommendations on the dynamics of Ponzi schemes disguised as credit markets.

Needless to say, if this account is right, it is more than obvious that no model of credit markets starting from the Modigliani-Miller baseline can be accepted as valid. There is a fantastic self-referential note in this literature. Ponzi schemes fall apart when they are exposed for what they are. Likewise, the zero-sum literature on secured lending falls apart when its implicit structure is exposed to the light of analytic reason.

Parts IV-VI review the reigning theories that rely upon the Modigliani-Miller baseline for their analysis. Each of these theories will be shown to rely on all the above absurd assumptions. Most of them assert that, in spite of the zero-sum baseline, secured lending is efficient. These theories hold that, if the firm allocates collateral to the right creditor, the firm increases value without thrusting externalities upon uncompensated parties. These theories, then, assert that secured lending is *not* a zero-sum game, but they start from the premise that, unless some explanation is forthcoming, secured lending is subject to the irrelevance critique. The zero-sum baseline, however, is of the utmost importance. When these models begin with such a baseline, always looking for the disturbing factor, the theorist is drawn to answer a false question: How shall scarce collateral be allocated by an insolvent debtor? This question misconceives the role secured lending plays in the dynamics of investment. In these models, there is no investment and no capacity for economic growth.

The zero-sum theories fall into several categories. Part IV covers the theories that assign different disutility curves or asymmetric information to the creditors.[10] In these theories, secured credit is allocated to the creditor with the greatest disutility for risk or with the least information. Unsecured credit is allocated to the "least cost avoider."

Part V analyzes a second allocative strategy—the tie-in of secured credit to monitoring services. The resulting economy of scale makes secured lending ethically acceptable within the con-

---

10 *See* Alan Schwartz, *Security Interests and Bankruptcy Priorities: A Review of the Current Theories*, 10 J. LEGAL STUD. 1, 21-28 (1993); James J. White, *Efficiency Justifications for Personal Property Security*, 37 VAND. L. REV. 473, 489-91 (1984).

text of a zero-sum game, because the security interest, properly allocated, lowers the cost of monitoring. Oddly, monitoring theorists radically oppose each other. Some think the worst monitor obtains security,[11] and some think the best monitor obtains it.[12] In fact, it can be shown with rigor that, from the logic of the zero-sum baseline, allocation of collateral is logically unrelated to allocation of monitoring duties. From the perspective of the Modigliani-Miller baseline, the most efficient monitor will monitor, and the most efficient user of collateral will take the collateral. If these are the same persons, they are so by coincidence. Hence, even if the zero-sum premise of the model is accepted as correct, the monitoring theories suffer from bad logic.[13]

Part VI reviews the newest theory,[14] which holds that security interests are, on the whole, inefficient and that they represent schemes by debtors to grab wealth from unsecured creditors. This theory also depends on the irrelevance hypothesis, but the authors confuse matters by asserting that secured lending is *potentially* efficient. Yet they cannot explain why this is so, given the zero-sum baseline assumption. Hence, these authors have no theory whatsoever to justify secured lending. Their only point is that, from the zero-sum baseline, secured lending exports costs to third parties and is therefore illegitimate.

I have stated that *most* theories commence with the assumption that lending is a zero-sum game, unless some disturbing cause is brought forth to break the correlation. Some theories have emerged from baselines that do not adhere to Modigliani-Miller assumptions. These theories are marked by the possibility that collateral is sufficient to secure all creditors. No longer is secured lending thought to be a matter of allocating scarce collateral among a surfeit of creditors. In these theories, it is possible for a *single* creditor to supply all credit to a debtor. This potentially singular creditor is capable of being fully secured, and the risk of

---

11 *See* Jackson & Kronman, *supra* note 4.

12 *See* Saul Levmore, *Monitors and Freeriders in Commercial and Corporate Settings*, 92 YALE L.J. 49 (1982); Randal C. Picker, *Security Interests, Misbehavior, and Common Pools*, 59 U. CHI. L. REV. 645 (1992).

13 The reader is warned not to make too much of this point in real life. Undoubtedly, the best monitor has a competitive advantage over the lesser monitors and therefore is likely to get the loan business from a debtor. This same lender will also take a security interest when, given monitoring skill, the security interest eliminates more costs than it causes. The point I will make is that, ultimately, monitoring and risk bearing are different functions. From the zero-sum baseline, each function will move to the most efficient performer of the function.

14 *See* Bebchuk & Fried, *supra* note 1.

debtor misbehavior is effectively destroyed. The focus of these theories is to question why and when this single creditor insists upon being secured, rather than unsecured. This question will be shown to be a much better question than the false question generated from the Modigliani-Miller models.

Ironically, the authors of many of these models wrongly assume that they *have* remained true to the Modigliani-Miller assumption. Even as they claim allegiance to the principle, their theories depart from the baseline in ways that I will demonstrate.

Part VII.A covers the so-called "relational" theory of secured lending. According to this theory, a secured lender ties informational services to the extension of credit, thereby facilitating business expansion.[15] Part VII.A will show that this theory depends upon the assumption that debtors issue security interests because they fear their own investment irrationality. By encumbering a productive enterprise, a debtor gives a secured party the leverage to force the debtor into making future profitable investments that the debtor pathologically refuses to make. So viewed, the theory must be accorded no validity. Indeed, its only virtue is that it departs from the Modigliani-Miller baseline and considers, however imperfectly, the role that secured lending might play in the creation of wealth.

Part VII.B deals with signaling theory. Signaling theory alleges that the debtor signals information to the credit market by offering security interests.[16] Part VII.B will argue that a mortgage cannot be viewed as a mere signal about a preexisting moral state, because mortgages radically alter and do not merely report that state. For this simple reason, all signaling theories must be viewed as failures.

I conclude with some remarks on the nature of wealth maximization and its worth for policymakers. Wealth maximization pretends that each and every cost and benefit can be scientifically catalogued, and that policymaking can be reduced to a neutral policy science. I will suggest that economists cannot bear the empirical burden. Accordingly, other norms must be used by policymakers; though to be sure, cost-benefit analysis will always play a welcome but modest role in prudential reasoning.

---

15 *See* Robert E. Scott, *A Relational Theory of Secured Financing*, 86 COLUM. L. REV. 901 (1986).

16 *See* Barry E. Adler, *An Equity-Agency Solution to the Bankruptcy-Priority Puzzle*, 22 J. LEGAL STUD. 73, 79-80 (1993); Schwartz, *supra* note 10; George C. Triantis, *Secured Debt Under Conditions of Imperfect Information*, 21 J. LEGAL STUD. 225, 249-55 (1992).

I. WHY SECURED LEDING IS POTENTIALLY EFFICIENT

In an earlier article,[17] I set forth a theory that showed secured lending to be potentially efficient. Whether it is actually so was left as an empirical question. Indeed, I suggested that the empirical burden of establishing the real (as opposed to the hypothetical) efficiency of secured lending was so great that it can never be accomplished. While apparently disappointing, this is precisely the same empirical burden that all utilitarian propositions face. This point, recognizable by economists as "the general theory of the second best," strongly suggests that legal regimes cannot be justified a priori on efficiency grounds. Other ethical norms are therefore required to account for secured lending—or any other legal regime.

Yet the mere demonstration of hypothetical efficiency of secured lending was an advance, because the standard zero-sum models could never establish even this much. According to this demonstration, secured lending is efficient for the very reasons our grandfathers and their grandfathers before them thought. Mortgages reduce the risk of debtor misbehavior and make credit available that otherwise would not be extended—a theory much scorned by the law-and-economics movement.[18]

The merits of this theory can be seen easily if one begins with price theory, rather than the financial economics of Modigliani-Miller.[19] Price theory is organized by the concept of the "perfect

---

17 *See* Carlson, *supra* note 8.

18 *See, e.g.*, *supra* note 5.

19 The reader should be warned that I have been judged a poor economist by Professor James Bowers. This is undoubtedly true, though Bowers has not produced examples. According to Bowers:

> Carlson makes very sloppy use of economic terminology throughout his article, leading one to suspect either that he is not terribly concerned about being careful and precise in his handling of an essentially useless theory, or else that he just does not have a very strong grasp of price theory. For instance, he claims that if revenues cover marginal costs, the viability of an enterprise is assured. In truth, *total* revenues must cover *total* costs, or *average* revenues must cover *average* costs, in order for this inference to be valid; if *marginal* revenue exceeds *marginal* cost but average revenue (demand) is less than average cost, then the firm will not, in fact, survive.

James W. Bowers, *Kissing off Economics and Misunderstanding Murphy's Law: Carlson's "On the Efficiency of Secured Lending"*, 80 VA. L. REV. 2215, 2224 n.33 (1994) (citing Carlson, *supra* note 8, at 2182). A generous reading of my text would have obviated this criticism, though I admit I could have been clearer. If I had said "long-term marginal cost" instead of just "marginal cost," my remarks would have been incontrovertible. All I ever meant to say is that, at the start of the investment, the investors must expect to make money. Otherwise, they do not invest.

The second example of my propensity to error is my claim that no rents can exist in

market." From this baseline, price theory operates by identifying market imperfections to which buyers and sellers must react.[20] A surprising feature of the perfect market—about which there seems to be surprisingly little literature—is that it contains neither time nor space. These are curious features indeed,[21] but ones that are quite important for the theory of secured lending. Price theory teaches that in a perfect market with no time or space, buyers instantly finance supply, and suppliers instantly produce. What else

---

competitive markets. *See id.* at 2224 n.33. Here Bowers is not on solid ground. My statement was made as to perfect markets—where contract is a priori efficient. *See* Carlson, *supra* note 8, at 2182-83. I made no such statement about competitive markets. I take a competitive market to be one in which the producer faces a horizontal demand curve. In such a market, an increasing marginal cost curve produces a difference between price and cost that constitutes a rent, as Bowers suggests. But such a phenomenon constitutes a market imperfection, because it implies that society would gain if all production occurred at economy of scale. One aspect of the perfect market (but not of the competitive market) is that, in the former, each input is paid the marginal physical product with respect to that input (Euler's Theorem). This assumption means that the economic rent of the competitive market has been abolished. *See* ALPHA C. CHIANG, FUNDAMENTAL METHODS OF MATHEMATICAL ECONOMICS 414 (3d ed. 1984); PAUL ANTHONY SAMUELSON, FOUNDATIONS OF ECONOMIC ANALYSIS 83 (1947); GEORGE J. STIGLER, THE THEORY OF PRICE 157 (4th ed. 1987).

20 Implicit in this exercise is the norm that, if market imperfections are removed, we move closer to the perfect market, and utility is more efficiently extracted from available resources. This is precisely what the "general theory of the second best" denies, however. A market imperfection may well be a perfecting compensation, counteracting some other imperfection. To remove one counterbalance without also removing the thing it cancels therefore makes things worse. *See* R.G. Lipsey & Kelvin Lancaster, *The General Theory of the Second Best*, 24 REV. ECON. STUD. 11 (1956).

21 The reader need not take my word for this. Two Nobel Prize winners agree. *See* RONALD H. COASE, THE FIRM, THE MARKET AND THE LAW 15 (1988) ("Another consequence of the assumption of zero transaction costs, not usually noticed, is that, when there are no costs of making transactions it costs nothing to speed them up, so that eternity can be experienced in a second."); Douglas C. North, *Economic Performance Through Time*, 84 AM. ECON. REV. 359, 359-60 (1994); *see also* Jeanne Lorraine Schroeder, *The End of the Market*, 112 HARV. L. REV. (forthcoming 1998); Jeanne Lorraine Schroeder, *Juno Moneta: On the Erotics of the Marketplace*, 54 WASH. & LEE L. REV. 995, 1030-33 (1997). James Bowers denies that anyone holds the view that perfect markets require the abolition of time. *See* Bowers, *supra* note 19, at 2216 n.5. The two Nobel Prize winners cited above disprove Bower's belief. Bizarrely, Bowers himself actually refers to the views of Ronald Coase on this matter later in his article. *See id.* at 2223 ("Building upon a statement by Ronald Coase—that if transaction costs were in fact zero, transactions could be sped up to the extent that eternity could be experienced in a flash—Carlson concludes that, because time in fact exists, transaction costs must be ubiquitous."); *see also id.* at 2227 (referring to "Professor Coase's interesting speculations about a world in which all transactions are instantaneous"). Furthermore, Bowers himself is the author of an economic model in which *space* is abolished. *See* James W. Bowers, *Whither What Hits the Fan?: Murphy's Law, Bankruptcy Theory, and the Elementary Economics of Loss Distribution*, 26 GA. L. REV. 27 (1991). As space and time are metaphysically the same thing, Bowers himself, albeit unwittingly, holds to the Nobel-Prize-winning theory that perfection lies beyond the realm of time and space.

could happen in an environment of no time or space?[22]

Lending (and indeed all investment) responds to the fact that, in real markets, we are plagued with both time and space, so that suppliers do not have instant access to revenue. Investment is required to bring supply into existence prior to the tender of revenue by demand. The challenge that investors face is assuring that the revenues promised by demand are indeed forthcoming to produce a return on the investment. Debtor misbehavior is one very severe impediment standing in the way of the investor and future revenue. Secured lending responds to the risk of debtor misbehavior. When a supplier is required to encumber productive assets and future receivables, the supplier is much disabled from diverting those assets from the secured lenders. Thus, when the debtor's real estate is mortgaged, the debtor cannot sell it to a buyer free and clear of the mortgage and disappear with the proceeds. When a debtor's equipment is hypothecated, the debtor will have a harder time liquidating that equipment and misbehaving with the proceeds.

In short, secured lending reduces the risk of loss caused by debtor misbehavior. When this risk is reduced, the expected revenues of the creditor are more likely to cover the marginal costs of the investment. As return on investment is a marginal cost that demand must eventually pay through future revenue, lower risk means that more credit will be extended, and more investment will bring about more production. It is not impossible that this increased production might be efficient. Whether it is so cannot be established a priori.

This is the sum total of the theory. Secured lending reduces risk, lowers the cost of lending, and makes more credit available. This is, of course, what any country banker would have said. There is nothing mysterious and certainly nothing new in this theory. Yet the theory is not possible from the baseline of a zero-sum game. From *that* baseline, such a theory, called "hackneyed" by two prominent zero-sum commentators,[23] becomes impossible. In fact, the theory which is "so common hackneyed in the eyes of men"[24] was the correct theory all along.

---

22 In Kantian terms, time and space are the preconditions of human experience. That which is beyond time and space is the "thing in itself," of which one can have no knowledge. *See generally* IMMANUEL KANT, CRITIQUE OF PURE REASON (F. Max Müller trans. 1920). The perfect market is therefore an unknowable thing, and any discourse that depends on it is antinomial.

23 *See* Jackson & Schwartz, *supra* note 7, at 1001.

24 WILLIAM SHAKESPEARE, HENRY IV PT. 1.

This Part has shown in the briefest possible way that secured lending does not necessarily operate in the context of a zero-sum game. The above theory suggests that only one creditor might exist to finance all production—one who might be fully secured.[25] The theory does not require the export of risk to third parties to explain the rationality of secured lending.[26] This short demonstration prompts us to reconsider the zero-sum models, which have very different—and quite invalid—accounts of the hypothetical efficiency of secured lending.

II. THE MODIGLIANI-MILLER IRRELEVANCE HYPOTHESIS

A major goal of this Article is to show that the famous Modigliani-Miller irrelevance hypothesis can provide no help in explaining the cross-elasticity between secured and unsecured credit. Accordingly, a concise description of the proper domain of that theory is essential.

In the 1950s, many financial economists believed that firms had some sort of undefined "natural" debt-equity ratio comprising its equilibrium corporate finance strategy. Any departure from that strategy was supposed to have resulted in a loss of firm value.

This "natural" theory was precisely what Franco Modigliani and Merton H. Miller set out to attack. Their strategy was to show that, without some further explanation, the capital structure of a firm had no effect on the expected value of firm revenues. Given that revenues were exogenous to their mode of ownership, it fol-

---

25 That is, one creditor is possible but not required. The zero-sum literature insists that multiple creditors are required.

In a recent article based on interviews with borrowers and lenders, Ronald Mann reports that single-lender relationships existed only in a minority of cases in his study. *See* Ronald J. Mann, *Explaining the Pattern of Secured Credit*, 110 HARV. L. REV. 625, 657 (1997). In these cases, multiple creditors may have found the means to cooperate in financing the debtor. For example, one lender might finance inventory and another might finance real estate (by either lending or renting). Suppliers may give 30-day unsecured payment terms, or the borrower may simply have the clout to borrow multiply according to the best price. The point is that secured lending is capable of dissipating risk by helping to assure the continuance of a cash flow able to meet all foreseeable debt service. The zero-sum literature, on the other hand, insists upon a law of conservation of risk, whereby every secured loan exports risk to some other unsecured creditor.

26 James Bowers complains of contradiction in my earlier exposition of this theory. *See* Bowers, *supra* note 19, at 2221 n.16. On the one hand, I say, "Contracts, by their nature, involve externalities." Carlson, *supra* note 8, at 2179. On the other hand, I propound "a theory of secured lending in which a debtor rationally issues security interests to creditors without exporting harms to others." *Id.* at 2181. Undoubtedly, the second remark is poorly drafted. What I should have said is that: (1) all contracts export benefits and harms to noncontracting parties; (2) and security agreements are potentially efficient (but are not guaranteed to be so).

lowed that debt-equity ratios were "irrelevant" to firm value.

To be sure, the irrelevance hypothesis was a heavily stylized model. The hypothesis assumes no taxes, for example. If the deductibility of interest expense from taxes is taken into account, then, of course, debt-equity ratios are quite relevant, because these ratios affect the amount of net revenue left after taxes. Also, no transaction costs exist in the Modigliani-Miller hypothesis—something this model shares with the famous Coase theorem.[27]

If Modigliani and Miller teach that the division of ownership between debt and equity claims is irrelevant, could the choice between secured and unsecured debt likewise be irrelevant? The answer, contrary to twenty years of law review scholarship, is clearly no. The following brief examination of the role debt plays in Modigliani-Miller will make this clear.

Modigliani and Miller assume that a firm has revenues with a fixed present value (V). No tax incentives work upon corporate structure, nor do transaction costs exist. For the sake of illustration, assume the firm has debt (D) and equity ($V - D$) that are both worth $0.5V$, so that the ratio of debt to firm value is 0.5. Modigliani-Miller show that the net aggregate value of debt and equity participation will not change if this ratio changes.

To test this hypothesis, suppose the firm decides to raise its debt-revenue ratio to .8. This can be accomplished by borrowing $0.3V$ and using the loan proceeds to redeem $0.3V$ in stock. To be sure, the $0.8V$ in debt now requires a larger share of cash flow to service, but the shareholders are precisely compensated for this extra expense by the fact that fewer shareholders remain to divvy up the remaining net cash flow. Because the investment strategy of the firm is unaffected by this borrowing, the increase in debt did not affect firm value, which remains at V.

The new demand for $0.3V$ of debt disturbs the equilibrium in the credit market, making credit more expensive, and the elimination of $0.3V$ of equity claims likewise increases the demand for equity shares. But, given no transaction costs, arbitrageurs instantly emerge to reestablish the prior equilibria; they will incorporate, raise $0.3V$ in equity contributions (by outbidding the equity market), and lend the $0.3V$ to the firm, thereby returning both the debt

[27] The Modigliani-Miller irrelevance hypothesis bears an affinity to the Coase theorem. The Coase theorem suggests that property entitlements are irrelevant to economic efficiency in a world of no transaction costs, because the market will instantly reallocate the assignments of entitlements to the highest valuing users. Both models, then, tie relevance of entitlements to the presence of transaction costs.

and equity markets to their former state of repose. In this market, V retains its prior value, even though the debt-equity ratio has been raised. Furthermore, since the Modigliani-Miller model assumes away transaction costs—and since time itself is a transaction cost[28]—these adjustments happen instantaneously.

Suppose the firm's debt-revenue ratio is lowered from .5 to 0.2. This is accomplished by floating a new equity issue in the stock market for $0.3V$. The proceeds of equity are used to retire debt. As the retirement of debt does not affect the present value of gross revenues, the value of the firm does not change.

Once again, the capital market is disturbed. Equity shares are cheap, and debt is expensive. Arbitrageurs, however, intervene to set things right. To obtain $0.3V$ for the equity investment, arbitrageurs will issue $0.3V$ of their own debt instruments, underselling the debt market. The proceeds of this "home-made" leverage[29] will be used to buy cheap equity shares, until the forces of supply and demand return both the debt and equity markets to their prior equilibria.[30]

From this description, several features of the Modigliani-Miller firm can be isolated for future use. First, note that the firm already exists. The firm has no origin or genealogy. The Modigliani-Miller model does not purport to account for investment or allocation of resources. It concerns itself only with the mode of owning productive assets that already exist.

This alone makes the Modigliani-Miller irrelevance hypothesis unsuitable for a general theory of secured lending.[31] The Modigliani-Miller firm never buys assets with the proceeds of loans or equity. To do so would be to change, for better or worse, the expected value of gross revenues. Instead, debt's purpose is severely limited. It is incurred solely for the purpose of redeeming equity shares. In short, Modigliani and Miller have in mind debt that serves only to achieve what today we call leveraged buyout financing. Meanwhile, equity is reciprocally limited in purpose to the retirement of antecedent debt.

A second predicate in the Modigliani-Miller model is that debt has a limit, deducible from debt's purpose. The maximum loan the firm will obtain (under our parameters) is $V - D - \varepsilon$,

---

28 *See supra* text accompanying notes 19-22.

29 As it is called in Modigliani-Miller literature. *See* RICHARD A. BREALEY & STEWART C. MEYERS, PRINCIPLES OF CORPORATE FINANCE 350-60 (2d ed. 1988).

30 *See* Modigliani & Miller, *supra* note 3, at 269-70.

31 Compare this with my theory, described *supra* text accompanying notes 17-26, which explained the origin of production and the role secured lending might play in that origin.

where ϵ is an incremental amount. If the firm could borrow more (for the purpose of financing a redemption of stock), then the value of shares would not be $V - D$, but would be the firm's borrowing limit (if any). With no borrowing limit in the model, firms could borrow infinitely, which then suggests that capital is not scarce. Capital finance would then be like oxygen in the atmosphere—not scarce and not susceptible to economic modeling.

Third, because debt is a slave to limit, no conflict exists between debt and equity. The absence of conflict might be viewed in two different ways. First, one might say of the Modigliani-Miller model that management simply lacks the propensity to misbehave. Or, if one wishes to invest the property of human will in management, misbehavior is rendered impossible by the assumption of perfect information, no transaction costs, and instantaneity. In such a universe, debt would withdraw capital instantly if management were to misbehave. For this reason, debt, in an environment free of transaction costs, disciplines management and prevents the imposition of uncompensated risk. The only risk permitted is the risk for which debt has been paid a premium, in exchange for not using its instantaneous power to withdraw capital.

Finally, because the purpose of debt and equity are to retire each other and because management can never impose uncompensated risk on debt, a law of conservation of risk operates in the Modigliani-Miller model. The only thing that ever occurs in the model is a change in the division of V between debt and equity. Risk can be increasingly concentrated in equity, as the amount of debt increases, but risk can be neither created nor destroyed by anything management does. In short, management is incapable of debtor misbehavior. Corporate finance is a zero-sum game.

This is not to say that Modigliani-Miller debt is risk-free. Modigliani and Miller specifically mention the phenomenon of increased interest rates in cases of high leverage. Such a phenomenon implies that debt is risky. But debt must be paid a fair premium to bear this risk. Otherwise, debt could instantly withdraw capital from the firm. Nevertheless, because debt is senior to equity, a decrease in leverage suggests a decrease in the risk debt faces and an exact increase in the risk that equity faces, consistent with a law of conservation of risk.

A Modigliani-Miller firm might be illustrated as in Figure One:

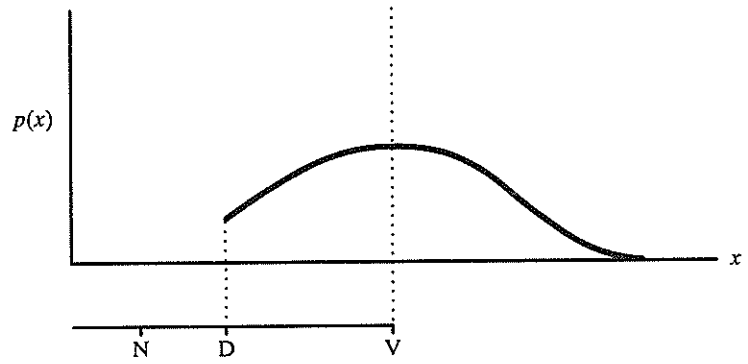

Figure One
The Modigliani-Miller Firm

In Figure One, the ordinate is the probability of x (a random variable of V). The abscissa is x. D is the downward limit of variance. No upside limit need exist. N is the amount of debt a firm arbitrarily chooses to bear. When N is also to the left of D, it bears no risk. N, however, must always be at or to the left of V. This is because the purpose of debt is strictly limited to retiring equity.

To summarize, debt in the Modigliani-Miller model might be risky, but only with regard to objective risk, exogenous to the firm. Debt is paid a risk premium for such a risk, but should management ever attempt to increase variance without compensation, debt can instantly withdraw itself from the firm. Debt, therefore, subjects management to discipline and eliminates the possibility of misbehavior.

III. THE METAPHYSICS OF SECURED LENDING IN A ZERO-SUM CONTEXT

The introduction of Modigliani-Miller assumptions into the commercial law occurs in an article by Thomas H. Jackson and Anthony Kronman, *Secured Financing and Priorities Among Creditors*.[32] In this influential article, Jackson and Kronman wished to break the imagined law of conservation of risk by suggesting that security helps allocate monitoring tasks to the creditor with the greatest comparative advantage in providing that service.

---

32 *See* Jackson & Kronman, *supra* note 4.

But, before they made this demonstration,[33] they established a baseline from which borrowing was a zero-sum game. This is precisely the move that financial economists make when they invoke the Modigliani-Miller model. Thus, Jackson and Kronman wrote:

> To see that [security is explained by differential monitoring skill], let us temporarily eliminate monitor costs from consideration by assuming the risk of debtor misbehavior to be zero, in which case neither C_1 nor C_2 will devote any resources, or require the debtor himself to devote any, to monitoring the debtor's conduct. Even on this unrealistic assumption, the interest that the debtor must pay on C_2's loan will rise if he grants C_1 a security interest in his property, since the riskiness of C_2's loan will increase at the same time that the riskiness of C_1's decreases. However, in a world without monitoring or other transaction costs, the increase in risk borne by C_2 should exactly offset the corresponding decrease in the risk to which C_1 is subject. Therefore, any change in the interest rates charged by the two creditors should just offset one another and leave the total cost of credit to the debtor unchanged. With transaction costs eliminated from consideration, it is difficult to see why the debtor would prefer giving C_1 a security interest in his property to granting each creditor an equal right to satisfy his claim from the entire estate, or how the welfare of the debtor and his two competing creditors could be increased by doing so.[34]

In this passage, Jackson and Kronman established the zero-sum game as the baseline of analysis. That is, secured lending was seen as lowering the cost of the loan, but only at the expense of increasing the cost of the unsecured loan. The task then became the discovery of some principle that allocates scarce collateral amongst the competing creditors, in order to overcome the debtor's indifference to secured lending. The allocative principle favored by Jackson and Kronman—differential monitoring skill and efficient division of labor—will be analyzed later in this Article.[35]

Following the Jackson-Kronman model came Professor Alan Schwartz's essay, *Security Interests and Bankruptcy Priorities: A Review of Current Theories*.[36] Schwartz strongly claimed that the

---

33 As we shall see later, their model demonstrates no such thing. Instead, their model shows only that security interests lower the joint costs of monitoring. Their model is incapable of identifying the best supplier of monitoring services. Nor is the security interest in any way related to the market for allocating monitoring tasks. *See infra* text accompanying notes 87-97.

34 Jackson & Kronman, *supra* note 4, at 1154-55 (footnotes omitted).

35 *See infra* text accompanying notes 75-102.

36 Schwartz, *supra* note 10.

Jackson-Kronman theory (and others) failed to break the law of conservation of risk. Economic scholarship was thrown back to the starting line of Modigliani-Miller assumptions. From then on, virtually every theory of secured credit took as its task escape from the grip of Modigliani-Miller assumptions.[37]

The Modigliani-Miller model was elegantly designed for a very narrow purpose—to study the effect of debt-equity ratios on the valuation of future cash flows of existing business operations. Because this was the task, Modigliani and Miller strongly limited debt's purpose to the retirement of equity and equity's purpose to the retirement of debt. In the work launched by Jackson, Kronman, and Schwartz, debt does not serve only to retire equity. Indeed, its function—never expressly described in these articles—is very surprising. Debt memorializes theft perpetrated by borrowers on their creditors—theft rationally financed by creditors in exchange for a "risk premium."

This amazing proposition will be established in the sections that follow.

A. *The Changed Definition of Debt*

At the zero-sum baseline of the secured lending models, the issuance of secured debt is irrelevant to a debtor's total cost of credit. Whatever risk is removed from the secured creditor's claim is added to the unsecured creditors' claims. Per the Modigliani-Miller model, risk is neither created nor destroyed; it is only reallocated.

The analysis achieves this baseline of irrelevance only by covertly changing the definitions of debt implied by Modigliani and Miller. In the Modigliani-Miller model, debt was that which could be instantly withdrawn from V in a world free of transaction costs. This instantaneous power of debt disciplined the firm's management into proper behavior. Debt might be risky because of some objective, exogenous expectation, but debt was fully compensated for bearing that risk. Equity was, in contrast, precisely the *inability* to pull out the investment prior to the unfolding of the firm's risky future. Equity must await the final outcome of V, but debt need

---

[37] The principal exception was Homer Kripke, who argued that security interests abolished a set of risks pertaining to debtor misbehavior, thereby bringing debt service within the reach of expected cash flow. *See* Kripke, *supra* note 6. This theory had no reliance on Modigliani-Miller assumptions whatever. Meanwhile, Professor Paul Shupack added a valuable critique of the Modigliani-Miller assumptions, pointing out many of their curious metaphysical features. He did not go so far, however, as to suggest that the entire baseline should be abolished as a mistake, as I do here. *See* Shupack, *supra* note 9.

not (and will not, if it bears any uncompensated risk).

If we apply these exact definitions to the secured lending models, it is clear that what Jackson-Kronman or Schwartz call "unsecured debt" is what Modigliani-Miller would call "equity." What they call "secured debt" is what Modigliani and Miller would call straight "debt" (usually in its risk-free guise). By this pouring of old wine into new bottles, the choice between secured credit and unsecured credit became precisely the choice between debt and equity that Modigliani and Miller proclaimed irrelevant.

Another way of saying the same thing is that the secured lending models have typically labeled the downward limit of firm variance. Thus any creditor who receives "collateral" has no risk to the extent of the collateral.[38] Modigliani and Miller do not express a downward limit on variance. Their model could accommodate such a limit, but does not require it.

B. *Scarce Collateral*

A second predicate of the zero-sum model is that collateral must be scarce. If it were not scarce, all creditors could be secured and hence immune from risk. Yet if no risk exists, how could there be a law of conservation of risk? Secured lending becomes quite relevant to the debtor's total cost of credit if sufficient collateral exists to collateralize all creditors, because then all risk could be dissipated. The Modigliani-Miller baseline, however, requires a law of *conservation* of risk, not total *eradication* of risk.

Hence, in order for risk to exist, a surplus of credit claims over and above collateral must likewise exist. Only in an environment of scarce resources is allocative science important.

We can best grasp what this means by revisiting the Modigliani-Miller firm:

---

[38] Jackson and Kronman do not conform to this observation. In their work, even secured credit is risky. That Jackson and Kronman traffic in risky secured debt does not harm their analysis. It only makes the exposition more complex. *See infra* text accompanying notes 75-102.

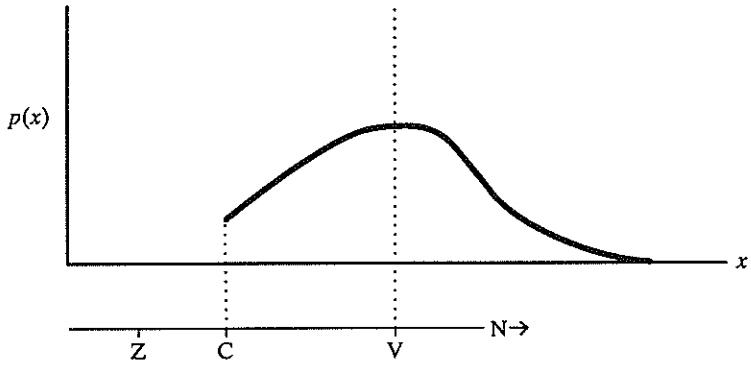

Figure Two
The Modigliani-Miller Firm Revisited

In Figure Two, C represents the maximum amount of risk-free Modigliani-Miller debt (earlier called D). V continues to represent the weighted average of possible outcomes if the risk in the firm plays out. N represents the amount of total debt outstanding, where $N > C$. Z is the amount of secured debt outstanding, where $Z < C$. Thus, total debt is always to the right of C, while secured debt is always to the left of C. Nothing in these models describes the upward limit of N. Only the downward limit of N is set. The law of conservation of risk absolutely requires the firm to borrow in excess of available collateral.

C. *Infinite Credit*

In the zero-sum models of secured lending, there exists no upward limit of borrowing at all. In Figure Two, it is required that $N > C$, but there is no logic that precludes $N > V$. Infinite loans may be rationally incurred.

The fact firms have unlimited access to credit becomes clear if we examine Alan Schwartz's definition of the risk premium developed in the zero-sum context:

$$X = \frac{-p(bA-[P-Z])}{1-p}$$

In this expression, X is the risk premium any creditor must charge, p is the probability of default ($0 < p < 1$), b is the ratio of

the lender's unsecured claim to total debt claims, and A is the assets available to satisfy unsecured claims, where $A \geq 0$.[39] P is the amount of credit the creditor has advanced. Z is the amount of collateral allocated to the creditor, where $P \geq Z$. We shall interpret Z as an unrisky guaranty of collection. The expression $[-p(bA - [P - Z])]$ is divided by a denominator $1 - p$, which represents the number of nondefaulting debtors. This augmentation of the numerator is necessary because the surviving debtors must cover losses that the defaulting debtor imposes on a given creditor.[40]

In this model, V—that is to say, the present value of cash flow—plays no part at all. Instead, principal (P) and interest (X) are potentially infinite numbers, and X might greatly exceed any conceivable cash flow of a firm. If the promised risk premium (X) indeed renders any lender indifferent to lending or not lending, then so long as a borrower promises $X + \varepsilon$, where ε is the smallest imaginable increment, any borrower obtains any loan from the credit market, no matter what infinitely high value X might take.

We could add by stipulation that a borrowing limit exists. For example, we could stipulate that the purpose of a loan is to refinance prior debt.[41] This would be similar to Modigliani-Miller's

[39] We also assume that $A < \Sigma P$; otherwise the creditor forgives debt if debtor equity survives default.

[40] The expression is adapted from Schwartz, *supra* note 10, at 8, with some modifications. Schwartz's own expression was

$$X = p(bA - P).$$

This expression has two faults. First, bA stands simultaneously for (1) the product of unencumbered assets (A) and the ratio (b) that a given unsecured creditor bears to the total of unsecured claims; and (2) the amount of collateral to which a single *secured* creditor is entitled. To correct for this, Z has been added to represent collateral dedicated to any given creditor.

In addition, Schwartz's formula wrongly assumes that X can be collected when a debtor defaults, when, in reality, a risk premium must be paid by the debtors who do *not* default. For example, if $p = 1$, $A = 0$, and $P = \$100$, and if the creditor has a portfolio of 100 similar loans, $-X = \$100$. Yet 99 debtors contribute only \$99 to cover the loss of \$100 in every 100th loan. Therefore, a creditor following Schwartz's pricing strategy would fall below margin. To correct for this, it is necessary to divide $p(bA - [P - Z])$ by $(1 - p)$, because $(1 - p)$ survivors must make up for bP losses, if the creditor is to charge the full marginal cost of lending. *See* Shupack, *supra* note 9, at 1125-29.

Finally, I have multiplied $p(bA - [P - Z])$ by -1 to prevent X from being a negative risk premium.

[41] This is done by Professor Steven Schwarcz, who assumed that secured debt that refinances unsecured debt. *See* Steven L. Schwarcz, *The Easy Case for the Priority of Secured Claims in Bankruptcy*, 47 DUKE L.J. (forthcoming 1997). Such a limitation matches a real-world practice of loan workouts. Refinancing might benefit those unsecured creditors who are not taken out, by increasing the probability that they will be paid eventually. Of course, these refinancings might also constitute debtor misbehavior—the extension of

assumption that the purpose of debt is to redeem equity.[42] If the model limits itself to this assumption, then security interests are, in effect, only issued on antecedent debt. Such transfers on the eve of insolvency are regulated as preferences, and are potentially voidable in bankruptcy.[43]

But why, outside of unjustified presupposition, should the firm adhere to any limitation on borrowing? For one thing, the very first loan the firm issues becomes inexplicable. The first loan certainly cannot adhere to any such principle. For another thing, creditors have no pressing need to require that loan proceeds be used to pay other creditors. The creditors require only that the debtor utter the promise to pay X—the risk premium. This risk premium, as Schwartz has defined it, is quite divorced from the value of V. Hence, the firm benefits its shareholders if it borrows beyond V in order to finance shareholder dividends (or, if you prefer, benefit managers by borrowing to fund bonuses). Stated another way, the law of conservation of risk requires that debt exceed the amount of collateral ($N > C$). Otherwise, there is no risk at all. Risk has been obliterated, not conserved. But if the law of conservation of risk requires $N > C$, it has no principled reason to limit N at all. N might be infinite.

Indeed, the only thing the zero-sum baseline insists on is that the loan proceeds may not be used to buy anything useful or prudent. If the loan were used for any such purpose, V would change. If V changes, the law of conservation of risk cannot hold. A security interest might displace risk from the lender without transporting it to some unsecured creditor. Hence, the law of conserva-

---

the firm's life when liquidation would be preferable for the unsecured creditors. Professor Schwarcz suggests that the interest of firm managers and secured lenders in protecting their reputations is a good guarantee that the former kind of refinancing predominates over the latter.

Dean Robert Scott complains of Schwarcz's model because it cannot account for purchase money priorities or the after-acquired property security interest. *See* Scott, *The Truth*, *supra* note 5, at 1446. There is good reason for this. Purchase money priority and after-acquired property security interests both imply that the firm has invested in something. This cannot happen in a zero-sum model.

[42] *See supra* text accompanying note 31.

[43] This is so if security interests are issued directly to the old creditors, or if they are issued to new creditors who then pay loan proceeds to old unsecured creditors. *See* Kellogg v. Blue Quail Energy, Inc. (*In re* Compton Corp.), 831 F.2d 586 (5th Cir. 1987); David Gray Carlson, *Tripartite Voidable Preferences*, 11 BANKR. DEV. J. 219 (1995). If we accept this limitation, it is an interesting datum that the security interests rendered problematic in zero-sum conditions end up voidable preferences—already condemned by the law. But it must be emphasized that all the theories being critiqued here do not perceive themselves as limited to voidable preferences. They purport to be general theories of secured credit.

tion of risk prohibits the dedication of loan proceeds to investment.

A different type of lending limit was proposed by John Hudson, who suggested that rational creditors would not lend unless a successful firm's revenues were sufficient to cover the risk premium.[44] He conceived the matter this way. Let V_s be firm value in case the firm does not default, V_u if firm value in case of default. The probability of default is $(1 - p)$. Z is the total claim of the creditor—both principal and interest. U is the total claims of other creditors. B is the present value of the debt claim. Hence, $B = pZ + (1 - p)V_uZ/(Z + U)$. On this formula, Hudson claims the borrowing limit of the firm is $V_s \geq Z$. In fact, this exogenous limitation is by no means required by the model. V_s nowhere appears in Hudson's binomial formula. V_s is simply added from the outside. Furthermore, if firms have infinite access to credit, as the formula implies, then V_s is precisely what can be borrowed. Hence, V_s expands infinitely to cover Z, which is itself susceptible to infinite expansion. It is the arbitrary will of the author, not the necessity of the model, that limits the capacity of the firm to borrow.[45]

---

[44] *See* Hudson, *supra* note 1, at 53.

[45] Professor James Bowers claims that a lending limit is implicit in the zero-sum model, but his demonstration is unsuccessful. He writes:

> [C]onsider Carlson's claim that Schwartz's economic analysis implies that the U.S. Trust Company would make unlimited loans to any skid row derelict, if only the deadbeat . . . promises to repay at a high enough risk premium. Schwartz has never said anything this silly.

Bowers, *supra* note 19, at 2222 n.28. Bowers then presents Schwartz's risk-premium formula ($X = p(bA - P)$) and suggests that the "skid row derelict" cannot get a loan on the basis of uttering the promise of X. The reason: the probability of default (p) is 1. Actually on the unrevised Schwartz formula, U.S. Trust *does* make the loan on this assumption, because X ends up equal to $-P$—the amount of the loan. Hence, Schwartz's formula suggests that the risk premium for the derelict is merely 100%, and U.S. Trust should, on Schwartz's reasoning, be ready to make this loan whenever the derelict agrees to pay double or nothing. *See* Shupack, *supra* note 9, at 1127-28.

I have revised the formula, however, to provide for a denominator of $(1 - p)$, on the grounds that it is not enough to charge the risk premium. U.S. Trust must also collect it. *See supra* note 40. Given such a denominator, if $p = 1$, the risk premium becomes impossible because we cannot divide the numerator by a denominator equal to zero. This, Bowers suggests, proves that derelicts cannot get loans.

What Bowers overlooks is that the probability of default can never be 1 in a universe where the derelict can always return to the credit market to refinance the U.S. Trust loan. (This is the well-recognized "greater fool" theory for which there is much empirical evidence.) Indeed, the paradox is why, in a "perfect" credit market, $p > 0$. If $p = 0$, no loan is risky. This paradox is discussed *infra* text accompanying notes 52-54.

Bowers' suggestion that there is a borrowing limit (derelicts, at least, cannot get loans) depends on the premise that the probability of default is certain ($p = 1$). Yet the zero-sum baseline requires borrowing past the amount of collateral available and provides no upward limit at all. In such a universe of infinite credit, $p < 1$, and Bowers' criticism

D. *Debtors Steal All Loan Proceeds*

In the zero-sum models, debtors always borrow in excess of existing collateral. What happens to the loan proceeds when this debtor firm borrows? Although many stories could be told about the fate of the loan proceeds, let us stipulate that the firm has distributed the loan proceeds to the shareholders, the managers, or their relatives. In short, the loan proceeds have been stolen or embezzled.[46]

That all loan proceeds end up in the pockets of shareholders should not be too surprising, because that is exactly where loan proceeds went in the original Modigliani-Miller model. The original Modigliani-Miller model, however, involved stock redemption at fair value. Since the only purpose of borrowing in that model was to redeem stock, $V - \varepsilon$ (total firm value minus an increment) in effect became the borrowing limit of the firm. In the zero-sum models of secured lending, however, no such limitation can be imposed, except by fiat. All that the law of conservation of risk requires is that debt exceeds assets.

If one examines Alan Schwartz's model of secured lending, it becomes readily apparent that loan proceeds have been stolen. In his example, an all-equity firm has the balance sheet described in Figure Three.[47]

Assets	Liabilities
$100	$0

Figure Three
All-Equity Firm in Schwartz Model

The firm then borrows $200. Figure Four sets forth the balance sheet after the loan (assuming the firm has failed):

Assets	Liabilities
$100	$201.01[48]

Figure Four
Firm After $200 Loan

---

fails.

[46] *See* Kripke, *supra* note 6, at 936-37 (complaining about this feature).

[47] *See* Schwartz, *supra* note 10, at 8.

[48] Although the creditors advance $200, they charge a risk premium of $1.01 on the formula presented earlier (given a 1% chance of default).

It will be noted that the firm has its original $100 in assets, against which the two creditors advance $200 in new credit. In Figure Four, the $200 actually advanced by these creditors have disappeared.[49]

One possible response to rehabilitate this model would focus upon the fact that the balance sheet in Figure Four represents the firm in the event of default, which occurs with a probability of p. The firm does not default with a probability of $(1 - p)$. Schwartz never sets forth the balance sheet for the nondefaulting firm. Hence, it might be said that the $200 in the above example went to buy an asset that has worth if the firm thrives but has zero scrap value. Some assets (like advertising) might have zero scrap value and yet a tangible worth to a going concern.[50]

We cannot accept this rehabilitative move, however. The point of Schwartz's model is to suggest that, from the zero-sum baseline, security interests seem to be neither efficient nor inefficient, but utterly mysterious. If we add the possibility that the loan proceeds are used to purchase something of value—which profits the firm with a probability of $(1 - p)$—then the security interest cannot be a priori irrelevant. The security interest might have been the sine qua non of the loan that allowed the firm to make a gain. The zero-sum baseline thus demands that the $200 in new credit disappear. Otherwise, the efficiency of the security interest would be an empirical question.

In favor of the rehabilitative move, it might be said that the shareholders could gain, but secured lending is still irrelevant. For example, suppose the $200 buys an asset worth $250 in the hands of the firm, but zero if the firm defaults with p probability. For example, if $p = .01$, then 99% of the time, the firm will have an asset worth $252.25. Advertising might be such an asset—or, more precisely, a prepaid expense. Advertising might be valuable to a going concern but worthless to a defaulted firm. Prepaid expenses are useless as collateral, so that the cost of credit is quite unaf-

---

[49] I suggested earlier that the firm at the zero-sum baseline has infinite access to credit. *See supra* text accompanying notes 39-45. As an experiment, suppose the firm in Figure Three elects to borrow $1 billion. On the formula set forth earlier, the firm with $100 in unencumbered assets and no debt can borrow $1 billion in exchange for the promise to pay $10,101,009.09 as a risk premium. The choice of borrowing $200 or $1 billion was arbitrarily chosen. Any number could have been used.

[50] In effect, this is what John Hudson implies when he sets the lending limit at the amount of revenues a firm expects if a binomial gamble is successful. *See* Hudson, *supra* note 1.

fected by the firm's investment in marketing. Secured lending is therefore irrelevant to the financing of this investment in marketing. Hence we have produced an example of irrelevant secured lending without the theft of loan proceeds.

At best this story constitutes a theory of advertising finance, not secured lending in general. It does emphasize that infinite stories could be told about what happened to the missing dollars. In fact, the creditors do not care whether the loan proceeds are purchased to buy advertising or are used to finance dividends. They will lend all the same. All that the law of conservation of risk demands is that the dollars be missing from the balance sheet when the firm defaults. If I refer to theft of the proceeds, this is perhaps histrionic, but it is quite consistent with the theory put forth. If we add that the firm wishes to maximize returns for shareholders, theft is a better, more plausible story than advertising.

E. *The Paradox of Default*

Given infinite access to credit, the real mystery is why firms at the zero-sum baseline *ever* default. If a creditor were to demand payment, the debtor could return infinitely to the market for refinancing. Creditors are infinitely willing to lend in exchange for a promise to pay back principal plus the risk premium of X. Both principal and risk premiums are potentially infinite numbers.[51] Although it would seem odd that creditors should lend knowing that the firm wishes to finance shareholder dividends (i.e., embezzlements), the creditors lend anyway, because they know that the firm will not default. The firm can simply borrow the needed funds from some new creditor in exchange for a risk premium.

Of course, the abolition of default means there is no risk in the world. There can hardly be a law of conservation of risk if risk does not exist. Risk must exist if there is to be a law that conserves it. Hence, we see in the risk-premium formula developed by Alan Schwartz, that $X = f(p)$. This amounts to a paradox. On the one hand, no creditor faces risk because a debtor can always raise capital in the credit market. On the other hand, unsecured debt is risky.

There is no accounting for this paradox except to note its existence and to suggest that the paradox counts as yet another reason why the Modigliani-Miller baseline (coupled with unlimited credit) was an unfortunate modeling choice. But if one must tell a story

---

[51] *See* Shupack, *supra* note 9, at 1135.

about the positive probability of default in these models, then one might say that *p* represents the possibility that a debtor will voluntarily allow the pyramid scheme to collapse by refusing to borrow any more from the credit market.

By now, it should be apparent that the zero-sum model has described a Ponzi scheme. A Ponzi scheme is:

> an investment scheme in which returns to investors are not financed through the success of the underlying business venture, but are taken from principal sums of newly attracted investments. Typically, investors are promised large returns for their investments. Initial investors are actually paid the promised returns, which attract additional investors.[52]

If I am right that these models unwittingly confound credit markets with Ponzi schemes, does it not follow that the Ponzi scheme will eventually blow apart? This is certainly our experience with pyramid schemes in general. The answer is no. There is no logical reason why the "greater fool" theory cannot last into perpetuity.[53] If pyramid schemes fall apart, they do so for strictly empirical reasons. Meanwhile, if the credit market is infinitely willing to refinance debt when a creditor wishes to be repaid, then these pyramids schemes theoretically have a life of infinite duration—as our national debt illustrates.

The Ponzi-like quality of these models are absolutely destructive of their worth, because they abolish the very notion of economic scarcity.[54] Indeed, since the debtor bears none of the costs

---

52 Sender v. Heggland Family Trust (*In re* Hedged-Invs. Assocs., Inc.), 48 F.3d 470, 471 n.2 (10th Cir. 1995) (citing *In re* Independent Clearing House Co., 41 B.R. 985, 994 n.12 (Bankr. D. Utah 1984)).

53 Witness the market for Treasury Notes issued by the federal government.

54 James Bowers suggest that I "completely confuse the concept of 'perfect' markets . . . with markets in which there are *no constraints* . . . . Economists, however, never held the view that a perfect market implied the absence of constraints and *the unlimited availability of costless resources*." Bowers, *supra* note 19, at 2225-26 (emphasis added). Putting aside the last italicized portion of the above remark, the following accounts of perfection by George Stigler and Guido Calabresi prove Bowers wrong. According to Stigler: "Costs are the obstacles that cause us to fulfill less than our full desires, so we need to investigate their nature." STIGLER, *supra* note 19, at 111. According to Calabresi:

> Once we understand the full significance of Coase's statement that transaction costs are costs, once we understand that their economic effect is the same as that stemming from the existence of friction, from the absence of manna, and from our incapacity to reduce the first or produce the second cheaply enough, then we must conclude that a move to the [Pareto] frontier and a shift of the frontier are, plain and simply, the same thing.

Guido Calabresi, *The Pointlessness of Pareto: Carrying Coase Further*, 100 YALE L.J. 1211, 1219 (1991). These scholars identify perfect markets as *precisely* those in which no impediment to desire exists, if "desire" is strictly construed as that which a consumer can af-

of X, the debtor has no incentive to pay *only* X. The debtor might as well pay $5X$ or $10X$, since these higher interest rates do not cause the debtor any disutility. In such a universe, the firm has no incentive to shop around for the lowest interest rate. This conforms with Ponzi schemes, where the stated dividend is simply a matter of taste.

F. *Perfect Community Between a Multiplicity of Creditors*

If security interests are to displace risk from one creditor to another, there had better be more than one creditor. If only one creditor exists, then, from the zero-sum baseline, the issuance of a security interest (to the one and only creditor) does not produce external costs. Rather, risk is internalized or (in real life) dissipated. Whatever risk is dissipated by the security interest simply vanishes, as breath into the wind. On such a view, security interests are quite relevant to the price of credit. In competitive markets, dissipated risk will manifest itself in the form of a lower price for credit.

The law of conservation of risk cannot permit this to happen and so, it presupposes creditor multiplicity. Only if surplus creditors exist does displaced risk have somewhere to go.

Creditor multiplicity implies, however, that no one creditor fears that the other creditors will be preferred for antecedent debt. If such a fear exists, creditors would have to charge the debtor the expected value of this risk, thereby increasing the total debt service the debtor owes. Of course, debtors may easily avoid this cost by borrowing from only one creditor.[55] But because a *multiplicity* of creditors is logically implied—otherwise there is no allocative puzzle—a debtor rationally borrows from a multiplicity only when the multiplicity produces no excess cost to the debtor. This condition adheres only when the creditors do not fear each other.[56]

---

ford to pay for.

As for "unlimited availability of costless resources," this is no aspect of the perfect market. Never have I supposed that perfect markets assume away all economic scarcity. Ironically, the very zero-sum models that Bowers defends implicitly assume it away, because debtors have infinite capacity to borrow. Such an infinite capacity contradicts the idea of economic scarcity. Ironically, it is Bowers himself who sees the credit market as providing "unlimited availability"—not of resources but of paper currency.

[55] Trust indentures replicate the single creditor thesis. Trust indentures can be viewed as a way of eliminating inter-creditor rivalry, by putting one fiduciary trustee in charge of all important decisions for the group.

[56] Of course, earlier it was suggested that the debtor never bears borrowing costs at all, in a world where the debtor has infinite access to credit. We are suspending that point and supposing, if only by magic, that the debtor wishes to minimize X. Although not strictly

Creditor multiplicity therefore implies perfect creditor harmony. No "Prisoner's Dilemmas" can exist in this model, because the debtor need not put up with this expense. No model following Modigliani-Miller assumptions as the baseline can be game theoretic.[57]

G. *Absence of Debtor Misbehavior*

In the Modigliani-Miller model, the firm already exists. The question is whether, in a world of no transaction costs and no taxes, V might be increased if the existing firm changes its debt-equity ratio. The answer is no, so long as the managers of the firm remain committed to the maintenance of V. The answer is yes, if the new debt-equity ratio causes the managers to adopt a different strategy from maintaining V. This latter conclusion is the essence of the Jensen-Meckling model, which purports to find that debt-equity ratios do indeed affect the value of the firm.[58] In both models, loan proceeds do not buy a productive asset. If they did, V obviously would change, and the models would lose their capacity to illuminate the narrow point for which they were designed. That narrow question was whether pure manipulation of the financial structure of the firm can raise V.

In the Jensen-Meckling model, a split between management and equity is introduced. Management now imposes "agency costs" on equity, thereby lowering the value of V, even though management does not change investment strategies. Jensen and Meckling suggest that the pure debt-equity ratio affects the schedule of agency costs (i.e., stealing) that managers will follow in their depredation of equity.

With one exception,[59] the secured lending models do not as-

---

consistent with the zero-sum baseline, it *does* happen to match the real world, in which borrowers increase their welfare when they reduce their interest expense.

57 This aspect of the model is emphasized by Paul Shupack, who writes:

> [B]ecause every creditor knows about every other creditor, and each knows the same things about the debtor and reacts the same way to that knowledge, all creditors together act as if they were a single creditor. Because the creditors act as if there is only one creditor, the creditors are no more concerned about how to divide these assets among themselves than a single creditor would be.

Shupack, *supra* note 9, at 1086. Shupack expresses the same idea in an alternate way: the creditors are diverse, but every creditor can instantly renegotiate terms when an extra creditor appears. *See id.* This is functionally the same as saying that the creditors are a true community—essentially one creditor.

58 *See* Michael C. Jensen & William H. Meckling, *Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure*, 3 J. FIN. ECON. 305 (1976).

59 *See* Adler, *supra* note 16. Adler's thesis is discussed *infra* text accompanying notes 263-68.

sume a split of equity and management. Instead, the literature assumes that management and equity are in a perfect community of interest. Furthermore, the "debtor"—as we shall call this community—is not capable of misbehaving against the community of "creditors." If it were, security interests would be relevant, to the extent they had any function in preventing the debtor from misbehaving.

Thus, the irrelevance of secured lending also requires the nonexistence of debtor misbehavior.[60] It was pointed out earlier that, in the irrelevancy models, debtors always steal loan proceeds. Paradoxically, this must not be considered debtor misbehavior. Debtors always compensate creditors for these thefts—by uttering the promise to pay a risk premium of X. In these models, collateral (C) never disappears. This amount is perennially available to the community of creditors, even as the ratio of unsecured to secured debt approaches infinity.

If we concede that managers have the propensity to invade C, then security interests become relevant. When C is encumbered by a security interest, then the equity owners of V cannot liquidate C. Liquidation of C is highly dangerous to all previous investors, because the cash proceeds can be stolen or gambled in ways that are adverse to the interest of investors. When C is susceptible to liquefaction, investors in V must discount V by the probability of debtor misbehavior. But if security interests lock C into place, rendering at least that much of V illiquid, the investors will no longer impose such a discount. The "bonding" quality of security interests on C will then have a beneficial effect on the value of V, contrary to the irrelevance hypothesis.

Mortgages are all about the propensity of debtors to steal from their creditors. For this reason, the Modigliani-Miller as-

---

60 James Bowers complains that zero-sum literature *does* account for the possibility of debtor misbehavior. Rather, he contends, this literature considered the possibility of misbehavior but concluded that it does not exist. This would appear to be exactly my point. Bowers' account of the zero-sum syllogism on the possibility of misbehavior proceeds as follows: (1) long-term debt gives more opportunity for debtor misbehavior; (2) short-term debt provides less opportunity for debtor misbehavior; (3) short-term secured debt exists; hence, (4) debtor misbehavior must not exist. *See* Bowers, *supra* note 19, at 2217 ("Curiously, Carlson's critique nowhere even suggests that Schwartz had considered essentially the very theory Carlson proposes and had rejected it as inconsistent with the widespread existence of secured short-term debt."). This progression is not tightly reasoned. Just because there is *less* opportunity for misbehavior in the short-term does not prove that misbehavior is impossible. But, more to the point, the argument reveals the havoc zero-sum assumptions impose upon clear thinking. The zero-sum effect of secured lending absolutely requires the total abolition of debtor misbehavior. This makes the Modigliani-Miller environment poorly suited to model real conditions in credit markets.

sumptions, which insist that debtor misbehavior does not exist, are poorly suited as a baseline to analyze secured lending.

H. *Wealth Loss v. Wealth Transfer*

To the extent that economic discourse concerns itself with the maximization of wealth, it does *not* concern itself with wealth transfer per se. Only those transfers with consequences for aggregate wealth are of concern. For this reason, the wealth maximization literature on theft has proven problematic and inconclusive. Theft, in this literature, is not wrong, unless it also implies a loss of wealth to society in general—always an empirical question.[61] This follows because, in utilitarianism, *nothing* is wrong except that which reduces wealth of society as a whole. The utilitarian critique of theft must show that production does not come into existence because producers fear that the proceeds of productive efforts will be stolen.

One challenge in economic analysis is the distinction between wealth transfers and wealth losses. A noncontractual transfer may be a private cost, but by no means is it self-evident that the transfer is a social cost. Without further explanation, normative economics is neutral about mere redistributions of property.

Lucian Arye Bebchuk and Jesse M. Fried, who claim that security interests violate the rights of unsecured creditors,[62] emphasize

> the intuition that underlies much of our economic analysis: that, when two parties are able to create a contractual arrangement that transfers value from a nonconsenting third party, they will have an incentive to create such an arrangement even if value is lost as a result. That is, the two parties will have an incentive to transfer value from the nonconsenting party even if doing so reduces the total value that is available to all three parties.[63]

Their statement is true insofar as it goes. Persons motivated

---

[61] *See, e.g.*, RICHARD A. POSNER, ECONOMIC ANALYSIS OF LAW 32 (4th ed. 1992) (making contingent arguments for legal punishment of theft).

[62] This demonstration was most unconvincing. The principle in question is the idea that creditors are equal in bankruptcy and cannot be subordinated without their consent. Bebchuk and Fried compared the grant of a security interest in collateral to a "third party detriment" contract in which C_1 and a debtor agree that a prior unsecured creditor C_2 should be subordinated. *See* Bebchuk & Fried, *supra* note 1, at 868-70. The same criticism of *sales* could have been made. When a debtor sells an asset to a buyer B, do not the debtor and B agree that C_2 should be subordinated as to that asset? Bebchuk and Fried do not just delegitimate secured lending in their comments; they equally condemn all power of alienation by anyone with in personam duties to another human being.

[63] *Id.* at 870.

solely by profit maximization (and no other human value) will, of course, conspire to steal anything and everything from others and from each other. But this is of no concern to a utilitarian, without the further demonstration that theft causes social loss. In theft, the private costs of individuals are precisely the private gains of other individuals; some further demonstration of a societal loss is needed to pique the ire of a utilitarian.[64]

The zero-sum literature also suffers from a confusion between wealth losses and wealth transfers. For example, in his article, Alan Schwartz suggests that, given the absence of an efficiency explanation, secured lending can only be explained by the export of risk to unsecured creditors, who cannot adjust the price of their loans to compensate for the risk. The displacement of risk transfers wealth from the unsecured creditors to the firm, but does it follow from this alone that this wealth transfer is also a wealth loss?

The demonstration that wealth transfers are wealth losses involves more complexity. An economist would have to show that the unsecured creditors are repeat players who are capable of learning from past private losses. These unsecured creditors therefore must respond to the increased risk by taking strategic steps to prevent or compensate for the displacement of risk by subsequent secured creditors. Such steps raise the marginal cost of lending and hence the marginal cost of investment. Yet the zero-sum baseline bars all investment. No goods ever change hands. All the zero-sum baseline can show is wealth transfers, not wealth gains or wealth losses.[65]

---

64 The Bebchuk-Fried article does recognize, from time to time, that theft is not a social loss standing alone. They give a standard example of a firm's incentive to prefer risky assets over certain assets when debt exists on the balance sheet. In their example, a firm could spend $3 million to gain $3.9 million. But the firm prefers to spend $3 million to gain only $3.85 million, because creditors can be made to absorb the downside risk while the upside risk is reserved to the equity participants. *See id.* at 873. This is a genuine wealth loss, because the $50,000 in wealth foregone by the firm utterly disappears from the world and is not simply transferred to someone else. Elsewhere, when shareholders choose to steal $96,000 from the $3.85 million value of the firm, the loss is not $96,000 but the $4000 in lost profit when the firm shuts down during the time of shareholder burglary. *See id.* at 873-75. (Incidentally, Bebchuk and Fried imply that an improvement in theft technology would be efficient in this last example, if theft could be accomplished with no plant shutdown.)

At other times, they assume that private costs are public costs, as when they denounce transaction costs of secured transactions. *See id.* at 877. It is not a priori true that paying a filing fee or a lawyer's fee is a wealth transfer or a social loss.

65 To make matters worse, even if one could show a deadweight loss in a single market (because marginal costs rise against a downward sloping demand curve), the deadweight loss is not a per se social loss, because the loss affects demand elsewhere. Shifting demand

As it stands, the law of conservation of risk implicates financial theory in a bad infinity whereby risk is never dissipated—only transferred. The only reaction of unsecured creditors is to charge a risk premium. When this occurs, wealth is transferred back from equity to the unsecured creditors. But in this strategic reaction, public wealth losses are not prevented. Only wealth transfers are. The case for true efficiency of secured lending can never be made within these models because they never involve supply, demand, or investment.

I. *False Questions*

When Modigliani-Miller assumptions serve as the baseline of analysis, the resulting critique of secured lending must respond to false and useless questions. Specifically, the Modigliani-Miller baseline assumes that there must always be a surplus of creditors pursuing scarce collateral. Therefore, the critique asks how scarce collateral should be allocated amongst the competing creditors. That this allocational question is false can readily be seen if we recall that, in the secured lending models, unsecured debt is really equity—not debt at all. The real question the critique addresses, therefore, is the question that Modigliani-Miller openly embraced—how much of the firm should be debt and how much of it should be equity in a universe where moral hazard does not exist?

What follows is an examination of the existing literature. As will be seen, these models allocate scarce collateral amongst competing creditors, in the hope of showing that, given the supposed zero-sum nature of lending, security interests are rational in some way not related to the exportation of costs to unknowledgeable unsecured creditors. The perceived need for an allocative principle is driven solely by the false question arising from the zero-sum baseline.

IV. ALLOCATION THEORIES

A. *Risk Aversion*

Suppose multiple creditors always exist, per the law of conservation of risk, and collateral is scarce. Who gets security and who is left unsecured? This is the major question that most of the

---

elsewhere could possibly produce a social gain that offsets the social loss directly at hand. This is another example of the "general theory of the second best," whose pervasive quality makes genuine welfare analysis empirically untrustworthy. *See supra* text accompanying notes 288-89.

efficiency literature addresses. Yet, it is a false question, because it uncritically assumes that secured lending must be a zero-sum game in an atmosphere of scarcity.

Several theorists focus on comparative risk aversion between creditors as the origin of security interests. The premise of these theories is that security interests are issued to the more risk-averse lenders and that the unsecured claims are held by the comparatively risk neutral creditors. Because these theories subscribe to the law of conservation of risk, the security interest only displaces, and never eliminates, risk. If risk is never eliminated in these models, its cost can be reduced by moving the less risky debt to the risk-averse lenders and the more risky debt to the risk preferring lenders.[66]

The usual objection to risk aversion as an allocative principle is that the security interests issued to large corporations disprove the theory. Large corporations are thought to be risk neutral. They can diversify risk. Yet they take security interests. These security interests supposedly refute the idea that risk aversion is their origin.[67] This objection, however, is itself the product of the zero-sum baseline. If, for example, we concede that debtors might misbehave, then security interests are highly desirable to *risk neutral* actors. Indeed, their very risk neutrality is a competitive advantage over risk-averse creditors. Risk neutral corporations are therefore *more likely* to take security interests than risk-averse parties, i.e., more likely to lend, because of this competitive advantage.[68]

---

[66] *See* Schwartz, *supra* note 10, at 22-24; White, *supra* note 10, at 502 ("[A] creditor who charges a large premium for a high risk will charge only the same amount as a risk-neutral person at a low risk, a debtor always saves money by securing highly risk averse-creditors.").

[67] *See* Schwartz, *supra* note 10, at 24.

[68] George Triantis, who accepts the Modigliani-Miller baseline, rejects risk aversion as a factor in allocating scarce collateral by pointing out that the market will bypass the risk-averse creditors entirely and will promote loans from risk neutral creditors. *See* Triantis, *supra* note 16, at 228. In other words, risk aversion is a competitive disadvantage of creditors in the market. Competition therefore demands the defeat of those creditors. Nevertheless, if a given oligopolistic community of potential creditors shares a homogenous view of risk, it is possible that risk aversion within that small community might be relevant in allocating security—assuming allocation is the right question (which it is not).

Wishing to propound an allocative theory based solely on comparative monitoring advantages, Thomas Jackson and Anthony Kronman must get rid of risk aversion, even while hanging onto the Modigliani-Miller baseline. Accordingly, they assert that security is not assigned to the risk-averse creditors because such creditors have investment opportunities elsewhere for the same risk as secured lending but with lower transaction costs. *See* Jackson & Kronman, *supra* note 4, at 1152 n.39.

This remark is not theoretically sound. Lower transaction costs elsewhere are ir-

Believing it necessary to operate within the confines of the zero-sum baseline, James J. White presents a theory that purports to explain why banks take security interests. According to Professor White, it is a mistake to look at the risk-neutral firm. Instead, we are to look at the risk-averse loan officers, who actually make the loans. Because these officers are risk-averse, the banks take the security interest. That is, White posits that these loan officers are afraid that, if a risk goes bad, they will be fired.[69] Other creditors, whose agents are less timid, will rush in to make the unsecured loans. The banks are left with unrisky secured loans—dull but reliable portfolios that earn substandard returns and yet are strong enough to weather any crisis.

History has not been kind to this suggestion. Since Professor White's article, the country has plunged into and emerged from a severe banking crisis based on the imprudent risks taken by these supposedly sheepish loan officers. Besides the verdict of history, other reasons exist to reject his theory. In particular, the theory assumes that bank employees are risk averse but that the employees of other lenders are not. White offers no explanation for why this should be so.[70] Indeed, the opposite is likely to be true: bank

---

relevant if *this* debtor *here* is willing to meet the existing high transaction costs of a secured loan. So long as the marginal costs of lending are being met, the lender is in a strict Nash equilibrium and cannot defect. Defection can only occur if the alternative debtor offers an economic rent. Yet, in a competitive credit market, this never occurs. *See also* Schwartz, *supra* note 10, at 23 (making a similar error).

The Jackson-Kronman attack on risk aversion continues:

> Turning to the other side of the market, it might appear that debtors will try to use secured financing to divide their indebtedness into high and low risk bundles and thus reduce their total interest charges. It is unlikely that such a strategy would succeed, however. In an active credit market, demand for debt bifurcated by risk will drive up the prices of low and high risk packages and drive down the price of medium risk packages until any advantage in bifurcation is dissipated.

Jackson & Kronman, *supra* note 4, at 1152 n.39. This is called a nonpooling constraint in game theory. The idea is that, through risk aversion, investors separate themselves out into those who prefer low-risk secured debt, and those who prefer the high risk junk. The competing medium package is attractive only in a pooling equilibrium (at least where only two types of risk aversion exists). *See* ERIC RASMUSEN, GAMES AND INFORMATION 197 (2d ed. 1994). But if a Nash Equilibrium already exists because the players are obtaining their marginal costs from the high-low package, they have no incentive to defect to the pooling contract.

In truth, if the Modigliani-Miller baseline holds and if the creditors share a homogenous view of the actual risk—two impossible conditions—comparatively risk-averse creditors will obtain security interests. But allocation of scarce collateral is strictly a false question spawned by the Modigliani-Miller baseline which depends on a false view of the world.

69 *See* White, *supra* note 10, at 492.

70 *Accord* Alan Schwartz, *The Continuing Puzzle of Secured Debt*, 37 VAND. L. REV. 1051, 1053, 1062 n.19 (1984).

officers may discount future losses too heavily. They will prefer to sponsor loan portfolios producing big income now and worry about losses some years later, by which time they may have changed jobs and thereby escaped blame. If so, then bank employees generate too much risk for their employers—something the history of banking vindicates.[71]

B. *Heterogeneous Expectations of Risk*

Risk aversion requires homogenous belief in risk, if it is to render itself visible.[72] Yet homogenous beliefs are unlikely to exist. Alan Schwartz therefore suggests that, when creditors disagree on the amount of risk a debtor poses, "it is always efficient for the firm to secure the creditor that assigns the highest probability to default."[73]

Just the opposite is true, and, once again, Schwartz has been misled by his Modigliani-Miller assumptions. According to these assumptions, there are always multiple creditors, and only some of them can obtain security interests. Multiplicity of creditors is an unnecessary assumption. If this assumption is relaxed, then it appears that the security interest will issue to the creditor with the *lowest* (not the highest) assessment of risk—quite the opposite of what Schwartz predicts. That is to say, a low assessment of risk constitutes a competitive advantage for a creditor. If all the creditors demand adequate collateral, then the creditor with the lowest risk assessment will tend to get the business—and on a secured basis. In short, the Modigliani-Miller thesis has led Schwartz to make precisely the opposite conclusion that he should have.

---

[71] Professor White makes a stronger claim—regulation restrains the risks that banks may take. *See* White, *supra* note 10, at 499-500. Indeed, many would say that the current banking crisis stems from a reduction of regulation in the 1980s. The suggestion, however, contradicts the notion that bank employees are inherently risk averse. One can fairly deduce from the presence of regulation that the government, at least, does not believe that bank employees are so risk averse.

[72] The idea of risk aversion is that investors have different disutilities toward risk. Risk aversion is dependent on the notion that money in the future is a different commodity from money now. *See* WILBUR G. LEWELLEN, THE COST OF CAPITAL 8-18 (J. Fred Weston & Allan Meltzer eds., 1969). With regard to money in the future, risk implies that the investment might be lost. Investors are said to have a declining utility for extra increments of deferred consumption. That is, a gain of $100 is worth less than the loss of $100 because future wealth is less useful than existing wealth.

Risk aversion can only be observed if heterogeneous assessments of risk are eliminated in an economic model. Risk itself is subjective assessment of the future, and so people will disagree about risk. We have to set aside this truth in order for risk aversion to appear.

[73] Schwartz, *supra* note 10, at 27.

C. *Staggered Debt*

Schwartz also offers a separate theory of "staggered debt." This theory also depends on the erroneous Modigliani-Miller thesis as its baseline, though it purports to be an exception to it. According to this theory, security interests lower risk for the secured party, but, as a direct result, risk for the general creditors is simply raised proportionately, and the debtor has achieved no savings. The "staggered debt" theory says that if the debtor can defer unsecured lending for a substantial amount of time, the debtor would pay low interest now and higher interest later. Just as tax deferral produces gains for taxpayers, deferred unsecured lending would likewise produce a gain.[74]

Because general credit might be substantially or entirely avoided, general credit is not merely deferred. It can be eliminated, or reduced, or subsumed into the secured loan itself as when the secured creditor supplies working capital. When this is possible—as it will be in any rational plan for a viable enterprise—it pays to grant a security interest, because future unsecured creditors do not exist. In short, unsecured lending can be deferred . . . forever! Risk would then be dissipated, not merely transferred.

The "staggered debt" idea of Schwartz is simply the false product of the Modigliani-Miller thesis. It is based on the erroneous assumption that, whenever a security interest is issued, future unsecured creditors *must* appear to charge higher risk premiums for increased risk. As this assumption is wrong, "staggered debt" theory explains a fact that does not exist.

V. MONITORING THEORIES

A. *The "Worst Monitor" Thesis*

The first theory to analyze secured lending from the Modigliani-Miller baseline is that of Thomas Jackson and Anthony Kronman. Their article, *Secured Financing and Priorities Among Creditors*,[75] surely one of the most influential works ever published in the field of commercial law,[76] is elegantly written and presented.

---

74 *See id.* at 21-22.

75 Jackson & Kronman, *supra* note 4.

76 This article not only gave rise to the justificatory literature of secured lending, but also engendered the "creditors' bargain" theory of bankruptcy policy, a popular normative critique of federal law. The relation between the Jackson-Kronman article and the creditors' bargain theory of bankruptcy is described in David Gray Carlson, *Bankruptcy Theory and the Creditors' Bargain*, 61 U. CIN. L. REV. 453 (1992).

Unfortunately, this elegance hides contradictions and logical mistakes.

Wishing to fathom the efficiency of the purchase money superpriority of the UCC—something they took to be anomalous to the basic rule of "first in time is first in right"[77]—Jackson and Kronman found that no theory existed to explain the efficiency of secured credit over unsecured credit in the first place. Therefore, they commenced with an analysis of this question as a prelude to their main task. Although the purchase money analysis has been significant in its own right, the Jackson-Kronman essay is principally known for its assertion that secured lending is a function of different monitoring skills of the creditors. According to their theory, poor monitors become secured creditors and good monitors become unsecured creditors.[78]

Jackson and Kronman start their analysis from the zero-sum baseline. In a Coasean world of no transaction costs[79] and a competitive credit market,[80] a single debtor must borrow from two creditors. There is a known, fixed amount of risk in the world. The transfer of a security interest to C_1 reduces risk for C_1, but increases the risk to C_2. That is to say, the model follows the Modigliani-Miller baseline. From the debtor's standpoint, the security interest is irrelevant.

Jackson and Kronman recognize that the risk of debtor misbehavior might change the value of the firm.[81] But, in their model, the risk of debtor misbehavior has already been abolished by costly monitoring. In effect, debtor misbehavior does not exist in this model. Nevertheless, security interests might reduce the cost of the monitoring that serves to banish the risk of debtor misbe-

---

77 Jackson & Kronman, *supra* note 4, at 1144 ("The overriding priority afforded purchase money lenders occupies an especially important place in the Article 9 scheme because it constitutes an exception to the general rule that competing security interests are to be ranked temporally, with earlier interests prevailing over later ones.") In fact, the purchase money priority is not an anomaly at all but is entirely consistent with the rule of "first in time," as a purchase money security interest and an after-acquired property security interest are created simultaneously. *See* David Gray Carlson, *Simultaneous Attachment of Liens on After-Acquired Property*, 6 CARDOZO L. REV. 505 (1985).

78 *See* Jackson & Kronman, *supra* note 4, at 1154 ("[T]he debtor can be expected to give a security interest to C_1 . . . when C_2 either needs to do less monitoring or is able to monitor more cheaply, than C_1.").

79 *See id.* Actually, if the Coase theorem is taken seriously, debtors need not be monitored at all because creditors already have perfect information and instantaneous ability to collect their debts upon default. These conditions make it impossible for debtors to misbehave. *See supra* text accompanying notes 31-32.

80 Jackson & Kronman, *supra* note 4, at 1168 n.82.

81 *See id.* at 1149.

havior.

According to Jackson and Kronman, if monitoring skills differ between C_1 and C_2,[82] and if collateral is scarce (per the Modigliani-Miller thesis), collateral should be given to the least efficient monitor, and monitoring responsibility should be allocated to the most efficient monitor. Such an allocation reduces joint costs among the three players.[83]

To illustrate their thesis, Jackson and Kronman present the following model in which each ordered pair represents marginal cost to C_1 and C_2 respectively:

	Unavoidable Risk	Monitoring Cost	Total Cost
No security to C_1	\$7, \$7	\$3, \$3	\$20
Security to C_1	\$5, \$9	\$1, \$4	\$19

Figure Five
Jackson-Kronman's Model[84]

The first column represents the risk that cannot be eliminated by monitoring. For example, when security interests do not exist, each creditor bears a risk of \$7, which they must charge out to the debtor.[85] The second column represents expected periodic monitoring expense. Thus, when security interests do not exist, each creditor monitors for \$3. The sum of the first row represents the debtor's total cost of debt, given ineluctable risk, efficient monitoring, and no security interests.

---

82 At one point, Jackson and Kronman suggest that different monitoring supply curves could result "because one creditor may simply think it less important to monitor the debtor in the first place." *Id.* at 1155 n.47. Such a reason violates the premise, made elsewhere in their article, of homogenous beliefs about risk. Different beliefs about risks are an important consideration, but are supposed to be eliminated in the Jackson-Kronman model in order to isolate the effects of pure monitoring skill.

83 *See id.* at 1158 ("The foregoing explanation of the economic utility of secured credit rests upon the assumption that total monitoring costs can sometimes be reduced by giving certain creditors priority over others."). Jackson and Kronman say that costs will be minimized "since they can share any savings between them." *Id.* at 1152; *see also id.* at 1156. This is inconsistent with the assumption of a competitive credit market in which the debtor captures all the benefit of cost savings. A split of the savings would exist only when the credit market is oligopolistic—that is, when C_1 and C_2 are not in competition. Oligopoly would have to be based on special information held by, plus contracts in restraint of trade between, C_1 and C_2, such that other lenders cannot outbid them for the loan.

84 This matrix is drawn from the verbal description that appears in Jackson-Kronman. *See id.* at 1155-56.

85 The law of conservation of risk can be observed in column one. If no security interest exists, the risk is worth \$14. If C_1 obtains a security interest, the risk is still worth \$14. The security interest affects only the cost of monitoring, not risk.

In the second row, however, C_1 obtains a security interest and C_2 stays unsecured. As a result, the debtor's cost of lending falls to $19 because total monitoring costs have declined from $6 to $5.

Jackson and Kronman allege that the model shows that the worst monitor obtains security, but in fact the model shows only that security interests lower the joint monitoring costs—and even this occurs purely by stipulation and without explanation. It does not establish the identity of the lesser monitor, nor does it establish that the lesser monitor will obtain security.[86]

According to row one in Figure Five, C_1 and C_2 are equal monitors. Both would settle at $3 as the amount of monitoring expense they foresee. But if C_1 takes security, C_1's monitoring costs are only $1 and C_2's monitoring rises to $4. On these numbers, there is no basis to say that C_2 is the good monitor and C_1 the poor monitor. In order to form that judgment, we need to see how C_1 might react if C_2 gets the security interest. For example, we might add a third row, reflecting a security interest issued to C_2 instead of C_1:

	Unavoidable Risk	Monitoring Cost	Total Cost
No security to C_1	$7, $7	$3, $3	$20
Security to C_1	$5, $9	$1, $4	$19
Security to C_2	$9, $5	$9, $1	$24

Figure Six
Jackson-Kronman's Model Revised

The first column in the third row shows that, if no risk of debtor misbehavior existed, C_2 and C_1 would simply trade places. This reflects the zero-sum baseline from which the Jackson-Kronman model departs. But security to C_2 causes C_1 to spend more on monitoring. Though C_1 would have spent $3 on monitoring as an unsecured creditor, it will now react to C_2's security interest by spending $9.

Only such a third row provides a basis for claiming that C_2 is the better monitor. Precisely, C_2 is a better monitor because C_2 reacts more efficiently to C_1's security interest than C_1 reacts to C_2's security interest.

---

[86] Interestingly, Alan Schwartz, in his critique of Jackson and Kronman, assumes that their thesis is not that the worst monitor gets security but rather that security interests generally decrease the joint monitoring costs of all the creditors. *See* Schwartz, *supra* note 10, at 13.

1. *The Non Sequitur in the Reasoning*

Though the above move is necessary to render the Jackson-Kronman claim coherent, it cannot rehabilitate the model because the Jackson-Kronman thesis rests on a logical non sequitur. Specifically, Jackson and Kronman claim that allocation of scarce collateral to the worst monitor lowers joint monitoring costs, but in fact there is no connection between the identity of the worst monitor and the identity of the secured creditor. In a market without transaction costs, the better monitor can take the security interest and sell her monitoring services to the worse monitor. Or the worse monitor will take the security interest and still buy monitoring services from the better monitor whenever it is efficient to do so. If the market for monitoring is separate from the market for risk, there can be no nexus between security interests and the identity of the monitor.[87] Of course, agency costs will exist, if monitoring duties are delegated,[88] but this consideration simply goes to determine who is the "best" monitor. It remains that, analytically, the market for monitoring and the market for risk bearing are distinct.

This point, however, is limited to the unnatural conditions of the zero-sum baseline. In real life, a firm hires agents to monitor the firm's borrowing customers. The market for agents (where the firm is a buyer) is obviously different from the market for credit (in which the firm is a seller). Nevertheless, the firm with the best agents obviously has a competitive advantage in the sale of credit. Such a firm may couple this advantage with the tender of secured credit. Hence, the secured creditor is very likely indeed to be the best monitor. But in this vision, it is not necessary to allocate the security interest between creditors. We could easily have one creditor who both monitors and extends the credit.

Within the zero-sum literature, however, where allocation of the security interest is the one and only question, disconnection of monitoring and risk bearing is a fatal problem. The demonstration of the disconnection between monitoring and secured lending proceeds as follows. According to the zero-sum baseline, creditors exist in a perfect community. The implication of perfect creditor community is that C_1 and C_2 never monitor each other. That is, C_1 does not fear a debtor-C_2 coalition, and C_2 does not fear a debtor-

---

87 Jensen and Meckling understood the disjunction of the market for risk and the market for monitoring quite clearly. *See* Jensen & Meckling, *supra* note 58, at 308-09.

88 *See* Triantis, *supra* note 16, at 243.

C_1 coalition. C_1 and C_2 face no Prisoner's Dilemma.[89] If they did, then, in a competitive market, the cost of the Prisoner's Dilemma would be visited entirely upon the debtor. Yet the debtor can avoid this expense by using only one creditor.

Multiple creditors imply perfect creditor community. None of the joint monitoring investment is motivated by fear of the Prisoner's Dilemma, and accordingly, all expenditures are aimed at preventing misbehavior by the debtor against the community of C_1 and C_2. Any form of debtor misbehavior affects C_1 and C_2 proportionately; no coalition between the debtor and one of the creditors is possible. In short, no model following the zero-sum baseline can be game theoretic.[90]

Referring back to the first row in Figure Four, the creditors will each bear $7 in unavoidable risk and will monitor for $3. The joint monitoring cost of $6 has completely eliminated any risk of debtor misbehavior. Because C_1 and C_2 operate in a perfect joint venture, C_1 and C_2 have the incentive to divide up monitoring chores between them efficiently. If they do not do this, some competing creditor (or condominium of creditors) will outbid C_1 and C_2 for their business. Thus, Jackson and Kronman ask us to assume that monitoring chores are divided up evenly,[91] but if C_1 is

---

89 *See supra* text accompanying notes 50-51.

90 Jackson and Kronman briefly touch on game theoretics as a means of explaining preference and fraudulent conveyance law:

> There is, in fact, a powerful reason for invalidating transactions of this sort, but it is an economic reason that has nothing to do with considerations of fairness [i.e., "equality is equity"]. If inequality itself is the vice, there is little to distinguish a secret lien from a well-publicized one, or a last-minute preference from a preferential transfer made long before bankruptcy. The objection to such transactions comes from a different quarter; if secret liens and eve-of-bankruptcy preferences were legally enforceable, creditors would either refuse to lend at much below the unsecured rate or would have to incur substantial costs in policing their loans, with the result that the principle advantage of secured financing would be lost.

Jackson & Kronman, *supra* note 4, at 1148. There is much that is confused in this passage. Jackson and Kronman seem to assume that, if voidable preferences were legal, then lenders with valid security interests would lose the benefit of their security. Yet, if the lender already owns specific assets, how can the debtor use those same assets to prefer some creditor without assets? Why are preferences a threat to *secured* creditors?

Be that as it may, I quote this passage because it seems to indicate that the authors believe that game theoretic considerations are "solved" by voidable preference law and the like—a questionable premise. The real reason game theoretic considerations are solved is because Modigliani-Miller assumptions insist that they do not exist.

91 That C_1 and C_2 are equally good monitors does not describe why they would split monitoring tasks between them. Any division would do. Perhaps we have monitoring supply curves that intersect each other at 3 and, together, intersect some marginal risk curve at 6. That is, C_1 monitors well early on, and C_2 monitors well later on.

Jackson and Kronman's own account of why C_1 and C_2 split the monitoring is as

the best monitor, C_1 should spend all $6 on monitoring and charge the debtor $13 for her side of the loan. Because the optimal $6 eliminates the risk of debtor misbehavior, C_2 faces no such risk. C_2 will be forced to lower the cost of her loan to $7. The debtor's total interest expense remains at $20.

This example demonstrates that there is no necessary connection between risk bearing and monitoring. Since monitoring protects the community, and whoever monitors protects all creditors equally, monitoring tasks must move to the most efficient supplier. Competition forces efficient allocation. The identity of the monitor is decided solely by the supply curves for monitoring. It would be wrong to assume that the person who bears the most risk will monitor the most.[92] Rather, the person who prefers risk the most will lend, and the person who monitors the best will monitor. They can be the same person, or different persons.[93] This is at least the case from the perspective of the zero-sum baseline, where debtor misbehavior has been abolished by monitoring and where the creditors exist in perfect community. Whether it is so in real life is another matter.

An analysis of the second row of Figure Four further shows that the identity of the secured creditor and the identity of the preferred monitor are not logically connected. In the second row, C_1 obtains security. As a result, joint monitoring costs fall from $6 to $5 (for reasons that are never explained). Jackson and Kronman show that C_1 monitors for $1, while C_2 monitors for $4.[94] Accord-

---

follows: "The assumption of equal overall costs is consistent with long run competitive equilibrium in the credit market. Attributes other than relative monitoring costs may, however, determine which creditors will actually be chosen by a given debtor." *Id.* at 1155 n.49. The remark about long run equilibria is mysterious. *Any* split of the monitoring responsibility is consistent with long run equilibria, if the creditors are equally good monitors. In addition, "[a]ttributes other than the relative monitoring costs" will *never* determine which creditor will actually be chosen to monitor, if these markets—for risk bearing and monitoring—are logically independent of each other.

92 For an example of this erroneous assumption, see F.H. Buckley, *The Bankruptcy Priority Puzzle*, 72 VA. L. REV. 1393, 1444 (1986); Jackson & Kronman, *supra* note 4, at 1154. For an exception, see Triantis, *supra* note 16, at 243-45.

93 Jackson and Kronman recognize this, but only in an incomplete manner. They suggest that, if the debtor is a better monitor than the creditor, the debtor will self-monitor. *See* Jackson & Kronman, *supra* note 4, at 1151-52. Yet there is no reason why this insight cannot be expanded to indicate other creditors or, indeed, persons who are not creditors.

94 In this respect, a criticism by Alan Schwartz is unjust. He writes:

> The monitoring-cost explanation for the existence of secured debt, as so far described, is similar to the conventional risk-reduction explanation analyzed above. It shows how security reduces the costs of the secured creditor but ignores the impact of security on the unsecured creditors .... [A]lthough security may reduce the secured party's monitoring costs, it seems likely to increase the

ingly, the debtor will issue security simply to achieve these lower joint costs.[95]

The assignment of monitoring to the unsecured creditor, however, is an unnecessary assumption. Between C_1 and C_2, the party with the best supply curve (i.e., the best monitor) will perform the monitoring for the community. Because, in a competitive credit market, monitoring behavior must always be fully compensated, and because Jackson-Kronman's model is fully cooperative and contains no Prisoner's Dilemmas, there is no reason why C_1 (with the security interest) should not do all or none of the monitoring, depending on the supply curves.[96] In short, so long as Prisoner's Dilemmas are avoided—as they must be in any Modigliani-Miller model involving multiple creditors—the comparative quality of monitoring has nothing to do with allocation of the collateral.[97]

> monitoring costs of unsecured creditors. The existence of security raises the expected cost of default for unsecured creditors by reducing the available asset pool and thus creates incentives for these parties to monitor more extensively.

Schwartz, *supra* note 10, at 10-11. In fact, Jackson and Kronman do not ignore the alleged increase in monitoring costs for the unsecured creditors. Their model stipulates that the unsecured creditor's costs go from $3 to $4 when C_1 takes a security interest. Jackson and Kronman do not describe the reason why this should be so, however. And, for that matter, neither does Schwartz explain his presumed law of conservation of monitoring expense.

95 George Triantis properly notes that, in a perfect creditor community, the most efficient monitor will take up the required monitoring tasks for the benefit of the community. *See* Triantis, *supra* note 16, at 243. But he claims a security interest is a good second-best strategy if the community does not exist. *See id.* at 245; *see also* Picker, *supra* note 12 (modeling this assumption). This, of course, ignores the fact that, if the community does not exist, the debtor has a strong incentive to use only one creditor who can internalize all agency costs.

If we may put this rather devastating objection to one side for a moment, Triantis argues that security interests encourage the secured and the unsecured creditors to replicate the optimal monitoring that would have occurred if they had been truly a community. *See* Triantis, *supra* note 16, at 244-45. This thesis would seem to contradict Jackson-Kronman's claim that security interests reduce joint monitoring costs. In the Jackson-Kronman model, the true community without the security interest monitored at a cost of 6. With a security interest issued to C_1, the community monitored at a cost of $5. According to Triantis, the best the creditors can achieve is the optimal cost, which Jackson and Kronman set at $6.

96 In Robert Scott's model and subsequent empirical observation, for example, the secured creditor does all or most of the monitoring. *See* Scott, *supra* note 15, at 932, 947. Homer Kripke, meanwhile, doubted that unsecured creditors do much monitoring under any circumstances. *See* Kripke, *supra* note 6, at 967-68 ("Monitoring by unsecured creditors scarcely exists outside of reviewing financial statements and including restrictive covenants.").

97 Jackson and Kronman, however, do not take this view of their own model. Rather, they write that C_2 must monitor more if C_1 takes a security interest, because "the effects of misbehavior will now fall more heavily on C_2 than they would if he had a pro rata claim to the debtor's entire estate." Jackson & Kronman, *supra* note 4, at 1154. The effect may

2. *What Is Monitoring?*

Jackson and Kronman address the false question of allocating scarce collateral to one of the multiple creditors. They propose that the worst monitor is allocated collateral, and the best monitor remains unsecured. Oddly, they provide no definition of what they mean by monitoring. Indeed, the implicit definition of monitoring is simply: whatever it takes to eliminate the risk of debtor misbehavior. For example, they write, "[a]ssume that by spending $X on monitoring a creditor can entirely eliminate the risk of debtor misbehavior."[98]

If all things that decrease the risk of debtor misbehavior are "monitoring," then security interests themselves constitute "monitoring" as well. Security interests eliminate the risk of debtor misbehavior by preventing the debtor from alienating the encumbered assets. Yet Jackson and Kronman intend "monitoring" to include all activities *except* taking collateral. Otherwise, monitoring could not be a function of, but would be the same thing as, obtaining a security interest.[99]

Furthermore, "monitoring"—a term borrowed from corporate finance literature[100]—is a poor choice of words. Its ordinary meaning is "to watch—to observe." Yet monitoring—in the sense of merely observing—is quite worthless on its own to prevent debtor misbehavior. Rather, power is the main thing. Monitoring is merely the maintenance and advertisement of the powers a creditor has to punish the debtor. Any theory of secured lending

---

indeed fall more heavily on unsecured creditors, but, in a competitive credit market, C_2 monitors only if C_2 does so at the lowest cost to the community. If monitoring and risk bearing are separate commodities, the Jackson-Kronman remark is incorrect.

98 *Id.* at 1151. The authors give a stray example. Thus, requiring the debtor to prepare financial reports is monitoring. *See id.* at 1150. But why is this a creditor cost? Perhaps the expected present value of the cost to read these reports is a monitoring cost to the creditor—but a very minor one indeed.

99 Here is how Jackson and Kronman describe the utility of security interests:

> The creation of a security interest in C_1's favor will benefit him in two ways. First, it will reduce the riskiness of his loan by making it more likely that the loan will be repaid in the event of the debtor's insolvency. Second, the existence of collateral is also likely to reduce the cost of the monitoring required to guard against the debtor covertly increasing the riskiness of the loan.

Id. at 1152-53. Both these features of security interests are true of monitoring as well—as Jackson and Kronman have implicitly defined it. Monitoring by C_1 or C_2 also makes repayment more likely, because monitoring removes risk. And, by definition actual monitoring also reduces the total cost of future monitoring. Therefore, Jackson and Kronman have failed to distinguish the two things they wish to explain—monitoring and security interests. *Cf.* Triantis, *supra* note 16, at 247 (referring to security interests as "self-policing" constraints over the debtor).

100 *See* Jensen & Meckling, *supra* note 58, at 308.

must concentrate primarily on power. Power without information is useless. Information without power is tragic.[101]

The word "monitor" as used by Jensen and Meckling is not problematic. According to them, monitoring includes "auditing, formal control systems, budget restrictions, and the establishment of incentive compensation systems which serve to more closely identify the manager's interests with those of the outside equity holders."[102] But, in the context of the market for corporate employment, we can easily infer that the power mechanism is the implicit threat that the employee can be fired if the reported information indicates misbehavior.

As applied to the credit market—and given the zero-sum baseline that Jackson and Kronman adopt—it is far from clear what monitoring is. At the zero-sum baseline, debt is risk-free, because, in a world of no transaction costs, debt can be instantly withdrawn. This instantaneous power to pull back capital requires that variance have a lower limit of *C* (available collateral). Thus, monitoring in a Modigliani-Miller model might be presumed to be the cost of information needed to activate this right. So viewed, monitoring is a transaction cost of debt. If introduced into the model, all firms would choose equity financing to avoid this transaction cost. Hence, the very idea of monitoring—whatever it is supposed to be—contradicts the zero-sum baseline.

3. *Summary*

The Jackson-Kronman model of secured lending assumes that risk of debtor misbehavior has already been eliminated by optimal monitoring. When one of the secured creditors is issued a security interest, the optimal monitoring changes. Although Jackson and Kronman allege that they have proved that the poorer monitor takes a security interest and the better monitor stays unsecured, they have done nothing of the kind. Their model permits no such inference. As multiple creditors exist in perfect harmony, the actual identity of the best monitor will be determined by the supply curves for monitoring, and never by the receipt of security.

It is interesting to note that, in their model, the security interest has no effect on debtor misbehavior, because debtor misbehavior does not exist. It was already abolished by monitoring, which Jackson and Kronman implicitly define as "whatever elimi-

---

101 *See* Mann, *supra* note 25, at 645 (complaining of the inattention to the ongoing power a security interest gives a lender over a borrower).

102 Jensen & Meckling, *supra* note 58, at 308.

nates risk." But security interests do have an effect on that which displaced the risk of debtor misbehavior—monitoring. Whereas the Modigliani-Miller thesis asserts that capital structure is irrelevant to the firm, Jackson and Kronman have produced a model in which capital structure *is* relevant. On their theory, a debtor rationally issues security interests, but does so only on the stipulation that security interests reduce the total cost of monitoring. Jackson and Kronman present no causal analysis of why this reduction of expense should occur. Nor do they adequately define what monitoring is. If monitoring is whatever eliminates the risk of debtor misbehavior, security interests themselves are a form of monitoring, not a function of it.

B. *Inter-Creditor Monitoring*

Monitoring theory requires multiple creditors existing in perfect harmony. If the creditors are expected to monitor each other out of mutual suspicion, the debtor would save expense by eliminating creditor multiplicity and simply using a single creditor.

Randal C. Picker presents a game theory model of monitoring that overlooks this simple microeconomic solution, and hence his model is invalid.[103] Yet it generates some interesting results—though not the ones to which Picker himself draws attention.

Professor Picker's thesis can be summarized as follows: an unsecured creditor without collateral fears that other creditors will take preferences and hopes to have a few for herself. These fears and hopes will generate unwanted monitoring costs that the debtor might have to pay for. Security interests protect lenders from the preferences that might be awarded to competing lenders. Since unsecured creditors know they cannot get preferences, they will not waste money trying for them. Their hopes have been crushed in advance.

In Picker's model, security interests lower the monitoring costs of the unsecured creditor. This contrasts with the Jackson-Kronman model, where security interests *raise* the monitoring costs of unsecured creditors (itself an unexplained assumption).[104] The difference in result can be accounted for. In Jackson-Kronman, the creditors operated in harmony (as the Modigliani-Miller assumptions demand). As a group, the creditors monitored the debtor. In Picker's model, the creditors monitor the debtor,

---

103 *See generally* Picker, *supra* note 12.

104 *See supra* Figure Five.

but they also watch each other (in violation of the Modigliani-Miller assumptions).

Picker starts by showing that, without security interests, creditors might still reach the optimal monitoring solution. In this initial demonstration, the debtor needs to borrow $100 from two creditors, each of whom will advance $50. The debtor cannot misbehave, but does have a .2 chance of failure. The chance of failure itself might be defined as proof of misbehavior,[105] but let us say, at least, that whatever misbehavior the debtor indulges in is not preventable through monitoring. With a probability of .8, the debtor earns $122.75, and the creditors can be paid. With a probability of .2, the debtor fails, and the creditors must split $84 between them. C_1 always faces a fixed monitoring cost of $5, and C_2 always faces a fixed monitoring cost of $8.[106]

Here are the payoffs the creditors face when the debtor cannot misbehave, or at least cannot behave any worse:

		C_2	
		Not Monitor	**Monitor**
C_1	**Not Monitor**	[$50, $50]	[$48, $48]
	Monitor	[$47, $48]	[$45, $42]

Debtor's revenues are $122.75 with a probability of .8 and $84 with a probability of .2.

Figure Seven
Picker's Matrix 2.1

A payoff pair of, say, {$50, $50} does not imply that C_1 and C_2 are charging a price of $50 for a loan of $50. That would be irrational, since the debtor poses a .2 probability of a loss on these creditors. Rather, {$50, $50} represents the return to the creditors when the creditors charge the debtor a price that exceeds $50. Thus, given the inherent risk in the project Picker describes, each creditor charges the debtor $52 for a loan of $50.[107] This price of

---

105 *See* Carlson, *supra* note 8, at 2186-88.

106 The real rates of return and inflation are set at zero, so that we can isolate the effect of monitoring costs on the price of loans.

107 When neither party monitors, each creditor's expected return is .8(52) + .2(.5)(84) = 50. More generally, where the face amount of C_1's claim is x and that of C_2 is y,

$52 is based on the creditors' assumption of {not monitor, not monitor}, but once the price is named, the creditors must then decide whether they will follow through on their assumptions. Picker asks us to assume that, after the debtor takes two loans of $50 at a price of $52, each creditor decides, on a one-shot basis, whether to commit to monitoring or not.

In this initial payoff matrix, the creditors lack the motive and cue for monitoring. Neither has the incentive to defect from a strategy of {not monitor, not monitor}. For example, after charging $52 on the assumption of {not monitor, not monitor}, suppose C_1 decides to monitor after all, in the hope of grabbing a preference of $52 in case of bankruptcy, instead of the pro rata share of $42. Since it costs C_1 $5 to monitor, C_1's expected payoff declines to $47, even if the preference is obtained.[108] In addition, if C_1 monitors, C_1 must worry that C_2 has also defected, in which case C_1 loses the preference of $52 and returns to the pro rata share of $42. If {monitor, monitor}, C_1's payoff declines to $45.[109] Because neither creditor benefits by defecting from the initial pricing assumption of {not monitor, not monitor} under any scenario, this assumption enjoys stability. Under these conditions, the creditors are able to avoid wasteful inter-creditor monitoring without security interests. Of course, the debtor could have achieved the same result by borrowing from only one creditor and giving no security interest at all. Only perfect creditor harmony produces creditor multiplicity from the Modigliani-Miller baseline.

Picker next tries to show that, with increased variance in firm value, a Prisoner's Dilemma might arise. Suppose the debtor has increased the variance in order to exploit a better upside potential. Instead of an 80% chance of earning $122.75, the debtor now has a 50% chance of earning $146. There is also a 50 % chance of de-

---

$$x = .8x + .2\left[\frac{x}{(x+y)}\right]84 = 50$$

$$y = .8x + .2\left[\frac{y}{(x+y)}\right]84 = 50.$$

Since, in this demonstration, $x = y$, $x/(x+y) = .5$.

108 This is shown in the southwest quadrant of Figure Seven. If {monitor, not monitor}, C_1's payoff is .8(52) + .2(52) – 5 = 47. Meanwhile, if {monitor, not monitor}, C_2's payoff is calculated as follows: .8(52) + .2(34) = 48.4. Picker uses rounded numbers in his matrix.

109 This is shown in the southeast quadrant. C_1's payoff if {monitor, monitor} is calculated as follows: .8(52) + .2(.5)(84) – 5 = 45. C_2's payoff is 42 because C_2's monitoring cost is $8, not $5.

fault, in which case assets again will be worth only $84. As the creditors know this at the time of loan pricing, this shift of risk does not constitute misbehavior. Rather, the creditors will simply charge a higher-risk premium in light of the debtor's new plans.

Suppose, in the face of this increased risk, the creditors initially price their loans on the assumption of {not monitor, not monitor}. Here is how Picker calculates the payoffs, if the parties both price on the assumption that neither creditor monitors:

		C_2	
		Not Monitor	**Monitor**
C_1	**Not Monitor**	[$50, $50]	[$42, $50]
	Monitor	[$53, $42]	[$45, $42]

Debtor's revenues are $146 with a probability of .5 and $84 with a probability of .5.

Figure Eight
Picker's Matrix 2.2

Because the debtor has increased the risk, the face amount of the debtor's obligation rises from $52 to $58. The total cost of borrowing $100 is therefore $116, the optimal amount given the unavoidable risk. A price of $116 suggests that the debtor will not pay for wasteful inter-creditor monitoring.

Because C_1 now has the opportunity to earn $53[110] if {monitor, not monitor}, C_1—whose price is based on {not monitor, not monitor}—has an incentive to cheat. Knowing this, C_2 faces a Prisoner's Dilemma (or so Picker claims).[111] C_2 must now monitor to counteract C_1. If {monitor, monitor}, C_2 is supposed to be better off than in {monitor, not monitor} because C_2*'s* bankruptcy dividend increases (and C_1*'s* bankruptcy dividend decreases).

Actually, close attention to Figure Eight reveals that C_2 is indifferent to C_1*'s* strategy. If C_1 monitors, C_2 faces a payoff of $42, whether C_2 monitors or not. If C_1 does *not* monitor, C_2 faces a payoff of $50, no matter what. Hence, C_2 is indifferent to strategy.

---

[110] .5(58) + .5(58) – 5 = 53. As for C_2's share: .5(58) + .5(84 – 58) = 42.

[111] *See* Picker, *supra* note 12, at 662. As to this payoff matrix, Picker writes:

> C_1 will monitor, regardless of what C_2 does, and C_2 will earn a subcompetitive rate of return. That means that C_2 will reject the proposed fee-schedule pair [based on {no monitor, no monitor}], and the parties will have to create a second set [based on {monitor, monitor}].

Id. at 672. That is, C_2 assumes that C_1 will always monitor in the above payoff matrix.

Meanwhile, C_1 always chooses monitoring, because, no matter what C_2 does, C_1 is better off compared to not monitoring. Professor Picker has therefore failed to model a classic Prisoner's Dilemma, which requires a unique suboptimal solution.[112] He *could* have done so on different numbers.[113] Let's wink at this technical lapse and move on.

Pricing on the assumption of {not monitor, not monitor} was irrational. Scrapping this assumption, the parties price their loans on {monitor, monitor}.[114] They therefore impose these costs on the debtor as follows:

		C_2	
		Not Monitor	**Monitor**
C_1	**Not Monitor**	[$55, $58]	[$40, $65]
	Monitor	[$64, $44]	[$50, $50]

Debtor's revenues are $146 with a probability of .5 and $84 with a probability of .5.

Figure Nine
Picker's Matrix 2.3

In this model, C_1 charges the debtor about $69 for $50 in loans and $5 in unwanted monitoring services. C_2 charges $73 for $50 in loan and $8 in unwanted monitoring services.[115] The debtor's total

---

112 The Nash Equilibria in Figure Eight are {monitor, not monitor} and {monitor, monitor}. A classic Prisoner's Dilemma should have a unique suboptimal solution. Given a matrix with the form:

		C_2	
		Not Monitor	**Monitor**
C_1	**Not Monitor**	[a, a]	[b, c]
	Monitor	[c, b]	[d, d]

a Prisoner's Dilemma requires that these relations exist:

$$(1)\ 2a > b + c > 2d$$
$$(2)\ c > a > d > b.$$

See RASMUSEN, *supra* note 68, at 39. While Figure Eight adheres to (1), it does not adhere to (2) insofar as C_2 is concerned. Instead, Figure Eight conforms to $c = a > d = b$.

113 A Prisoner's Dilemma does appear in Figure Nine, a few pages ahead.

114 In fact, {monitor, not monitor} is also an equilibrium assumption upon which they might have founded their pricing.

115 These prices are calculated as follows:

lending cost is therefore $142 for the use of $100. Thus, instead of paying $116—the optimal amount—the debtor must pay $142 because the creditors face what we are pretending is a Prisoner's Dilemma.

Earlier, I emphasized that any debtor facing a Prisoner's Dilemma can eliminate it by using one, not two, creditors. In fact, creditor multiplicity is rational only when those creditors exist in perfect community. Multiplicity of creditors and Prisoner's Dilemmas are mutually exclusive concepts, within the parameters of the zero-sum baseline. It would be useful to compare what would happen if the Pickerian debtor followed this strategy of eliminating any Prisoner's Dilemma through the use of one creditor.

If the debtor borrowed from one creditor, thereby eliminating the Prisoner's Dilemma, the debtor could reduce the total cost of the loan from $142 to $116.[116] If it uses a single creditor, the debtor not only saves monitoring costs of $13, but saves double the monitoring costs, for a savings of $26. By using *two* creditors, the debtor does not merely pay for unwanted monitoring. It pays *double* for undesirable monitoring.[117] This proves that using a sin-

---

$$x = .5x + \left[\frac{x}{(x+y)}\right]84 = 55$$

$$y = .5x + .5\left[\frac{y}{(x+y)}\right]84 = 58.$$

Solving the first formula for y, we get:

$$y = \frac{x^2 - 26x}{110 - x}$$

and substituting for y in the second formula, $x = 69.115$, and $y = 72.884755$.

At this stage, the creditors are pricing on the basis of {monitor, monitor}. Yet C_2 is indifferent to monitoring, since C_2 knows that C_1 always monitors, and C_2 obtains $42 whether or not C_2 monitors. But the debtor is not indifferent. {Monitor, monitor} costs the debtor $142, but {monitor, not monitor} costs only $134. Hence, the debtor should intervene to impose discipline on the creditors, forcing them to price on the basis of {monitor, not monitor}, not the more expensive {monitor, monitor}.

This debtor intervention to get rid of unwanted monitoring sinks Picker's entire model. If the debtor can intervene here to force a price based on {monitor, not monitor}, the debtor could have done the same thing in Figure Nine, to insist upon a price based on {not monitor, not monitor}. This strategy is easily accomplished by using only one—not two—creditors.

116 This is calculated as follows: $.5x + .5(84) = 100$, so $x = 116$.

117 This follows from the fact that, even though the creditors monitor, there is a .5 chance that the creditors will lose their monitoring investment. Therefore, if joint moni-

gle creditor is the same as using a multiplicity of creditors where the unsecured creditors have no chance of any recovery.

In Picker's model, a security interest also serves to prevent inter-creditor monitoring.

		C_2	
		Not Monitor	**Monitor**
C_1	**Not Monitor**	[$50, $50]	[$50, $42]
	Monitor	[$45, $50]	[$45, $42]

Debtor's revenues are $146 with a probability of .5 and $84 with a probability of .5.

Figure Ten
Picker's Matrix 2.3

In Figure Ten, C_1 obtains a security interest and charges $50 for a loan of $50, because C_1 is guaranteed a return of $50 in every scenario. C_1 has no incentive to monitor because C_1 is already preferred.[118] C_2 can monitor at a cost of $8, but monitoring no longer promises the hope of a preference; C_1's priority is locked in.[119] Therefore, C_2 will price on the basis of {not monitor, not monitor}. C_2 charges $66 for a loan of $50. The debtor's total cost of borrowing is $50 + $66 = $116. This is the optimum price the debtor can pay, given the project the debtor wishes to undertake. The security interest has restored perfect creditor harmony. In this model, the security interest is simply a substitute for borrowing from one lender.

Picker's model, so far, deliberately removes the debtor's incentive to increase misbehavior, as the other secured credit models do. He follows, however, with a model that entails the possibility of combined debtor-creditor misbehavior. In this combined model, {not monitor, not monitor} is suboptimal, because the debtor will defect to a riskier project than the one the creditors would prefer. The optimal strategy pair is therefore {monitor, not monitor}. The better monitor prevents all risk of debtor misbehavior without wasting any expense. This model is particularly significant because it rigorously disproves the Jackson-Kronman

---

toring is 5 + 8 = 13, the debtor must pay $26 to reimburse the creditors for this risk.

[118] If C_1 monitored, C_2, who charged $50, would decline a payoff of $45. This is shown in the southwest quadrant.

[119] This is shown in the northeast and southeast quadrants.

thesis that security interests go to the worse monitor. What Picker's model shows—with some necessary modifications—is that the identity of the secured creditor is unconnected with the identity of the monitor.[120]

In the combined debtor-creditor misbehavior model, the creditors expect the debtor to pursue a "low risk" project which produces $146 with .5 probability and $84 with .5 probability. If no one is watching, the debtor will misbehave. She will invest in a project that fails with a probability of .9, in which case the bankrupt estate is worth $40. She succeeds with a probability of .1, in which case she earns $635. Therefore, some monitoring is necessary. C_1, as the best monitor, should have the honor, but since C_2 cannot trust C_1 in case of {monitor, not monitor}, C_2 must also monitor in an unproductive way. This is shown in Figure Eleven:

		C_2	
		Not Monitor	**Monitor**
C_1	**Not Monitor**	[$24, $26]	[$38, $65]
	Monitor	[$64, $44]	[$50, $50]

If no monitoring, debtor's revenues are $635 with a probability of .1 and $40 with a probability of $40; if one or two creditors monitors, debtor's revenues are $146 with a probability of .5 and $84 with a probability of .5.

Figure Eleven
Picker's Matrix 3.3

In this model, monitoring is needed to prevent misbehavior. Yet the creditors fear each other. Therefore, since one creditor must monitor, both must do so. C_1 charges about $69 for $50 in loans and $5 in monitoring services.[121] C_2 charges about $73 for $50 in loans and $8 in monitoring costs. The debtor's total cost of borrowing is about $142.[122] Yet if the debtor could give a security interest to C_1, the optimal amount of monitoring and risk can again be restored:

---

120 Picker himself fails to see this. *See* Picker, *supra* note 12, at 677 (asserting that his model shows that "the secured creditor does the monitoring").

121 *See supra* note 94.

122 This was also the cost produced in Figure Nine, where the debtor was incapable of misbehaving.

		C_2	
		Not Monitor	**Monitor**
C_1	**Not Monitor**	[$41, $7]	[$50, $45]
	Monitor	[$50, $50]	[$50, $42]

Figure Twelve
Picker's Matrix 3.4

In Figure Twelve, C_1 advances $50 in loan and expects to spend $5 in monitoring. C_1 charges $55, because C_1 always obtains $55 in repayment in all scenarios. C_2 charges $71 for taking the junior position. C_2 has no incentive to monitor, and C_1 has no incentive not to monitor.[123] The debtor's total cost of lending is $126. Once again, $126 is precisely the cost of borrowing from one lender without issuing a security interest, proving that, when zero-sum assumptions hold, security interests make no difference so long as the creditors exist in a single community.[124] The perfect community would have charged $126 with or without the security interest.

An interesting result occurs if, as shown in Figure Twelve, the security interest is issued to C_2 instead of C_1, where C_1 monitors. Once again, the optimal price of $126 is reached, proving, contra Jackson and Kronman, that monitoring skill is unrelated to the ownership of the security interest:

		C_2	
		Not Monitor	**Monitor**
C_1	**Not Monitor**	[$7.6, $45]	[$55, $42]
	Monitor	[$50, $50]	[$50, $42]

Figure Thirteen
Picker's Matrix 3.4 Revised

In Figure Thirteen, C_1 charged $55 for loan and monitoring. Now C_1 charges $76.[125] C_2 had charged $71 in Figure Twelve. Now

---

123 This can be calculated as follows, where C_2's price is y: $.5y + .5(84 - 55) = 50$.

124 If there is one lender, she will charge z according to this formula: $.5z + .5(84) = 105$, or $z = 126$. In Figure Eight, the cost of borrowing from a single lender was 116. Now it is 126. This increased cost of $10 comes from the fact that, in Figure Eight, zero monitoring was optimal. Now $5 is optimal, an investment the creditor will forfeit with a probability of .5. Therefore, the creditor must charge an extra $10 to recover the cost.

125 C_1's share is: $.5x + .5(84 - 50) - 5 = 50$, where $x = 76$.

C_2 charges $50. The debtor's loan cost stays the same at $126. This disproves the Jackson-Kronman thesis that the security interest issues to the worst monitor. As lending and monitoring are essentially separate functions, the two are uncorrelated. Picker's model—as expanded herein—rigorously shows this to be true.

To summarize, Picker's model proves that, when the zero-sum baseline holds, security interests make no difference whatsoever. A debtor can either avoid Prisoner's Dilemmas by using a single creditor with no security interests, or she can use multiple creditors together with a security interest.[126] If security interests bear positive transaction costs, Picker implicitly predicts that security interests will never issue forth from the zero-sum baseline. Far from explaining security interests, Picker's model shows them to be impossible under the conditions demanded by the Modigliani-Miller thesis.

The Picker model may be faulted for other problems as well. Throughout the model, the strategy pair of {monitor, not monitor} or its converse allowed C_1 to obtain a preference over C_2. The nature of this preference, however, is never described.

There are two possibilities. First, the preference might have been a voluntary payment. This suggests that the debtor *is* misbehaving, presumably in return for some concession from C_1. If so, Picker's theory is *not* a model of inter-creditor monitoring, but a theory of debtor misbehavior, the same as the Jackson-Kronman theory. Second, C_1 might have obtained an involuntary transfer of assets—a judicial lien. But why hasn't the debtor filed for bankruptcy in order to destroy this lien under voidable preference law? In either case, the debtor is implicated in the web of its own misbehavior.

The debtor's entanglement in the preference suggests that the sharp distinction that Picker draws between debtor misbehavior and creditor misbehavior is a false one. In fact, debtor misbehavior is typically a coalition between the debtor and some transferee. For this reason, it is inappropriate to justify security interests as designed to prevent *creditor* misbehavior. There is no such thing, apart from a conspiracy with the debtor. More accurately, security interests are aimed at coalitions between the debtor and third party transferees, including creditors. They are never aimed at creditor misbehavior in isolated form.

---

126 *Cf.* Alex M. Johnson, Jr., *Adding Another Piece to the Financing Puzzle: The Role of Real Property Secured Debt*, 24 LOY. L.A. L. REV. 335, 351 (1991) (suggesting that security interests and the use of a single creditor are interchangeable concepts).

In addition, the security interest in Picker's model had no effect on the cost of monitoring the debtor. This contradicts Jackson and Kronman, who imply that security interests affect monitoring expense. Given that debtor misbehavior probably requires transfers by the debtor to third parties, and given that security interests disable the debtor's power of alienation, Picker's assumption that security interests do not lower monitoring costs is almost certainly false. This assumption is surely the result of giving the term "monitoring" no express definition. Any such attempt to define terms would have drawn Picker's attention to the fact that security interests affect the *power* of debtors to misbehave.

C. *The "Best Monitor" Thesis*

Jackson and Kronman theorize that the worst monitors get security interests. This overlooks the fact that, from the zero-sum baseline, the market for monitoring is distinct from the market for risk-bearing—a bad monitor will therefore hire a good one when it is rational to do so. Security interests may affect the total amount of monitoring necessary, but they do not determine who monitors.

Saul Levmore theorizes precisely the opposite from Jackson and Kronman. He suggests that *good* monitors take security, because they can cut out the bad monitors from the free ride they would otherwise take.[127]

Of course, if monitoring and security interests bear no necessary relation to each other, because these services are traded in separate markets, then Levmore's theory is defeated as decisively as that of Jackson and Kronman. Yet Levmore adds new errors and mistakes to the analysis that make his theory especially unsatisfactory.

In the Jackson-Kronman model, creditors were a true community. Every monitoring dollar spent by a creditor reduced the risk of debtor misbehavior for the group. If C_1 monitors, C_1 charges the debtor, and C_2, facing less risk, reimburses the expected value of the expenses to the debtor by lowering the interest rate accordingly. When monitoring efficiently eliminates more risk than the cost of monitoring, the creditors benefit as a group, which means that the debtor benefits when credit markets are competitive.

---

[127] *See* Levmore, *supra* note 12, at 58; *see also* Lucian Arye Bebchuk & Jesse M. Fried, *The Uneasy Case for the Priority of Secured Claims in Bankruptcy: Further Thoughts and a Reply to Critics*, 82 CORNELL L. REV. 1279, 1312 (1997); F.H. Buckley, *The Termination Decision*, 61 UMKC L. REV. 243, 287 (1992); Triantis, *supra* note 16, at 242.

In Levmore's model, if C_1 monitors and C_2 relies on this, the creditors reach a "suboptimal result."[128] The nature of this suboptimal result is that C_2 enjoys a "free ride."

Levmore's theory that the best monitor wishes to eliminate free riders is demonstrably incorrect. In a competitive credit market, C_1 is happy to monitor for C_2 or anyone else—*if* C_1 is paid for it. And, when monitoring is rational—if it eliminates more costs than it generates—the debtor is happy to pay C_1 for it. To the extent C_2 benefits from C_1's monitoring, C_2 happily reimburses the debtor for it by lowering the rate of interest. There is nothing suboptimal here. On this account, free riders do not exist.[129]

To establish a free rider concern, Levmore must show that the best monitor will not be compensated for the marginal cost of monitoring. Accordingly, it is an embarrassment for Levmore's theory that he later predicts that the best monitor will actually earn *economic rents* in monitoring.[130] Even if free riders existed (which they do not), no monitor would give up economic rents, just because there are free riders. Economic rents imply that monitoring is the absolute, most profitable thing C_1 can do in the world. Economic rents therefore mean that C_1 will never surrender the activity in question. Free riders are therefore irrelevant. Let everyone ride for free, so long as C_1 earns economic rents!

At the end of his article, Levmore modifies his thesis by suggesting that good monitors take security to eliminate free riders only when the debtor's assets constitute good "focal points."

> When such focal points are unavailable, talented monitors are best employed as *unsecured* creditors so that they will, at least, have some incentive to monitor. Other creditors who are less talented or prefer security in an environment thick with

---

128 Levmore, *supra* note 12, at 54.

129 The latter half of Levmore's article extends his monitoring theories to other aspects of capital structure. According to Levmore, shareholders need to monitor their managers, but no shareholder has the incentive to do the work. Since the cost of monitoring is not capitalized into price, the shareholders will not monitor. They need secured creditors to monitor specific assets. When the secured creditor repossesses collateral, the shareholders, noting the newspaper advertisements for the foreclosure sale, will realize that the debtor has misbehaved and the company is broke. *See id.* at 69-70.

There is a lot wrong with this account. Foreclosure sales may provide useful evidence that the managers have misbehaved, but is not this information just a little too late to help the shareholders, who have by then lost their investment? In any case, for our present purposes, why are not these shareholders free riders whom the secured creditor would like to eliminate? The truth is they are, yet so what? The secured creditor is fully compensated for any monitoring costs that can be foreseen, and therefore none of them poses any threat to good monitoring.

130 *See id.* at 59.

freeriding potential will tend to acquire collateral.[131]

Notice that Levmore now hints that *bad* monitors might take collateral, quite the opposite of what he had been asserting throughout his article wherein *good* monitors take collateral.

According to this last reversal in theory, if some of the collateral is not conducive to monitoring, then monitors should be unsecured creditors. "In such settings," Levmore writes, "talented monitors will prefer to serve as unsecured creditors, collecting their rewards in the form of interest rate premiums that exceed their actual monitoring costs."[132] In other words, when collateral loses this odd quality of focality, the good monitor earns monopoly profits. Yet, when collateral comes back into focus, the good monitor is willing to give up economic rents for fear of free riders!

What is this focality of collateral? Levmore writes:

> Some of the debtor's assets might not be useful as collateral for secured transactions. Additionally, for administrative or other reasons, Article 9 and other legal norms may not provide for the use of such assets as security interests. The extent to which the basic monitoring-freeriding argument can be adapted to explain the entire list of transactions excluded from Article 9 lies beyond the scope of this Article.[133]

This comes close to saying that nonfocal collateral is the same as no collateral. In any case, just because Article 9 excludes some security interests from coverage does not mean the excluded assets cannot be collateral. Real estate would be eliminated from consideration if Levmore were right.[134]

To summarize, Levmore's theory of free riders fails for at least two reasons. First, free riders do not exist. Second, even if they did, they do not matter. So long as the monitor is compensated for the marginal cost of monitoring, free riders would not matter, even if they existed.[135]

---

131 *Id.* at 58. Economic rents imply that monitoring is absolutely the most profitable thing C_i can do in the world. The second best thing is C_i's opportunity cost, already part of C_i's marginal cost of production. Economic rents therefore mean that C_i will never surrender the activity in question. Free riders are irrelevant.

132 *Id.* at 59.

133 *Id.* at 69 n.92 (citations omitted).

134 *See* U.C.C. § 9-104(j).

135 Commentators have struggled with little effect to figure out just what Levmore means by focal collateral. *See* Adler, *supra* note 16, at 87-88 (reading Levmore to mean that nonfocal collateral is the going concern value minus liquidation value); Scott, *supra* note 15, at 911, 926 (reading nonfocal collateral to be inventory and accounts). Lucian Bebchuk and Jesse Fried have recently remarked:

> According to this explanation—the "focal point" theory—the secured creditor monitors on behalf of all of the other creditors, and is compensated for its efforts

VI. EXTERNALITIES

The previous zero-sum models all assumed (at least provisionally) that exportation of costs to unsecured creditors was impossible. Unsecured creditors could adjust instantly to any new risk imposed upon them. These "adjusting" creditors were always indifferent to the imposition of risk. In such an environment, secured loans were guaranteed to be efficient because, in the absence of externalities and economic irrationality, only private gain could motivate the borrower and the secured creditor.

Lucian Arye Bebchuk and Jesse M. Fried imply, however, that, when unsecured creditors cannot renegotiate a risk premium, debtors are motivated to export costs to such creditors by issuing inefficient security interests.[136] In spite of this, security interests might sometimes produce gains to society as a whole.

The end result of the Bebchuk-Fried theory, then, is that the

---

> with a priority interest in the borrower's assets. The other creditors rely on the secured creditor to police the borrower, reducing their interest rates because they need not expend resources monitoring the borrower.

Bebchuk & Fried, *supra* note 1, at 916. This is a gracious interpretation indeed, but it misinterprets Levmore. Levmore precisely claims that unsecured creditors will *not* reimburse the debtor for arranging to be monitored by the secured creditor. That refusal to lower interest rates was what made them free riders.

It may also be said of the Bebchuk-Fried interpretation that the security interest on focal collateral is not necessary to compensate the monitor. Hard cash or any other material advantage will do. Once again, it is analytically unnecessary to assume that security interests are inextricably tied to the provision of monitoring services.

For some reason, Levmore's essay draws a great many extraordinary misreadings. Alan Schwartz, for example, alleges that Levmore is inherently contradictory in arguing that a good monitor will monitor less after taking security. Schwartz asserts that less monitoring *proves* the secured creditor is a bad monitor. If she were a good monitor, she would have continued to monitor by definition. *See* Schwartz, *supra* note 70, at 1057 n.11.

This maneuver simply rejects the author's definition of a "good monitor," substitutes that of the critic's, and then faults the author for not following the critic's preferred definition. Levmore wants to prove that bad monitors are not paying good monitors for services rendered. To combat this free riding, good monitors take security so they can monitor less. The point is that producers who do not get paid do not produce. To say that a producer is not a good producer because, ex hypothesi, good producers perform for free, is not a clever criticism.

Robert Scott also seems to misunderstand Levmore's thesis. He writes: "What assurance do the unsecured creditors have that a secured creditor will not simply repossess the collateral at a critical juncture and make itself whole while they, having diminished their monitoring efforts, remain oblivious to the onset of insolvency?" Scott, *supra* note 15, at 911. Levmore's point is that the secured creditor precisely *does not* care what happens to free riding general creditors. The unsecured creditors should have been monitoring for themselves all along, according to Levmore.

Finally, Randal Picker reads Levmore as arguing that a secured party will monitor the debtor so heavily that no further monitoring is needed by the subsequent general creditors—quite the opposite of Levmore's thesis. *See* Picker, *supra* note 12, at 659.

136 *See infra* notes 142-78 and accompanying text.

efficiency of secured lending cannot be settled a priori, but is only an empirical question. This is the correct result that any economic theory must reach about secured lending (or any other important social institution).

If results matter and methodology does not, we might close the matter here and limit our critique to this: if the efficiency of secured lending cannot be established a priori, then, absent an empirical study, one cannot make policy recommendations on the basis of wealth maximization. Rather, other values must decide the matter.

Yet a sound methodology is the only thing capable of providing confidence in results. In this spirit, I delve behind the *result* of the Bebchuk-Fried study—with which I have no complaints—to examine the methodology. This examination reveals that Bebchuk and Fried, at least from time to time, follow zero-sum assumptions in modeling the efficiency or inefficiency of secured lending. When they rely on this baseline, they are unable to explain why security interests are efficient. For lack of any theory of the efficiency security interest, they fall back on the premise that, given zero-sum assumptions, secured lending is motivated only by theft of value by debtors from unsecured creditors.

Furthermore, they make a fundamental error by equating theft of value with social loss.[137] Theft, as we have seen, is never a priori inefficient. Theft denotes a transfer of wealth from one person to another, but not its creation or destruction. It is significant, then, that Bebchuk and Fried can show *neither* that security interests are potentially efficient or potentially inefficient. The reason for this theoretical impotence is their implicit reliance on the zero-sum baseline.

Oddly, they present a second model to show that security interests discourage firms from using efficient unsecured lending, coupled with covenants restricting debtor misbehavior.[138] This separate model, with separate assumptions, does not proceed from the zero-sum baseline, but rather is a genuine investment model. Unfortunately, the model is a failure, as the authors confound mere wealth transfers with deadweight wealth losses.

Finally, late in their article, Bebchuk and Fried allude to a good reason why secured lending might be efficient. It might "facilitate the financing of desirable activities."[139] In their view, how-

137 *See supra* text accompanying notes 61-65.

138 *See infra* notes 192-206 and accompanying text.

139 Bebchuk & Fried, *supra* note 1, at 913.

ever, this gain might be outweighed by externalities imposed on unsecured credit. But their demonstration is deeply unsatisfactory. The demonstration is based on the covert switching of baselines from investment to zero-sum baseline in midstream. This switch of assumptions means that Bebchuk and Fried compare apples to oranges. The inefficient investment they present is actually enormously efficient, on one reading of their model. Alternatively, on another reading, the investment is far less efficient than they claim.

In the end, the Bebchuk-Fried article produces not a single valid economic insight. If they imply the inability to decide a priori on the efficiency of secured lending, they do so from a zero-sum baseline and all the impossible metaphysics such a baseline requires. When they occasionally depart from the baseline (without announcement or explanation), other errors sink their enterprise. Perhaps least satisfactory of all about this article is that, having implied that secured lending cannot be economically blessed on an a priori basis, these authors nevertheless presume to make a policy suggestion. They suggest that all secured lending should be subject to a 25% tax in favor of unsecured creditors—a non sequitur from their premises. Such a tax can be efficient only if the bad effects of secured lending outweigh the good. Given their inability to determine whether good outweighs bad, their radical proposal for a tax on all secured lending is left quite naked and bereft of justification.[140]

A. *Methodology*

That Bebchuk and Fried rely on the zero-sum baseline can be drawn from their principal numerical portrait of the efficient security interest. The baseline is hidden behind detritus that must be cleared away before the zero-sum soul of the model can be observed.[141] The detritus in question is their theory that secured

---

[140] In a 1997 revisitation of their theory, Bebchuk and Fried deny they favor a tax on secured lending (what they call a "partial priority rule"). According to the authors:

> Thus, although some commentators have read *The Uneasy Case* as advocating adoption of a partial-priority rule, we tried to make clear in *The Uneasy Case* and will restate here that, at this point, we merely think that these rules should be considered with an open mind as alternatives to full priority.

Bebchuk & Fried, *supra* note 127, at 1321 (footnotes omitted). Presumably, when a proposal is set forth as productive of net benefits, it is being "advocated."

[141] In their recent revisitation of their theory, Bebchuk and Fried make clear the zero-sum soul of the model:

> [W]e are not arguing that the incorporation of a security interest into a loan transaction . . . will always have the effect of transferring value from nonadjust-

lending has the function of making a person's unencumbered asset more valuable in case of default. For example, if I own Blackacre and Whiteacre, I can make Whiteacre more valuable by mortgaging Blackacre. If a grocer encumbers aisle A (containing cans of carrots) with a security interest, she can expect customers to rush to aisle B to pay a supracompetitive price for cans of peas.[142]

Once again, the zero-sum baseline has produced an impossible and absurd theory. The only thing Bebchuk and Fried have proven is that, from the zero-sum baseline, it is impossible to think intelligently about the function secured lending plays in the marketplace.

The principal Bebchuk-Fried model has five stages:[143] (1) A firm has three assets worth $450,000 and $1 million in old debt before obtaining new credit. For ease of exposition, I will nickname these assets Blackacre, Whiteacre, and Greenacre. (2) The firm obtains $2 million in unsecured credit. No security interests are issued. The $2 million in loan proceeds are purloined by persons unknown. No new assets are obtained. (3) The firm issues an efficient security interest on Blackacre simultaneously with the new credit. As a result, the value of Whiteacre and Greenacre increases. (4) The firm issues a second security interest on Whiteacre simultaneously with the new credit. The value of Greenacre increases. (5) The firm issues a third security interest on Greenacre. Since no unencumbered assets remain, the third security interest creates no value and is inefficient. It is selfishly motivated by stealing value from the unsecured creditors. In Stage Five, the zero-sum soul of this model yields forth its prodigy.

In Stage One, Bebchuk and Fried hypothesize a firm prior to obtaining the new credit. The firm has a 5% chance of failure. If the firm fails, it is certain to have the following balance sheet:

> ing creditors. The creation of a security interest giving the secured creditor bankruptcy priority will, *everything else equal*, transfer value from nonadjusting creditors by reducing their *fractional share* of the bankruptcy pie.

Id. at 1305-06 (emphasis added). This remark is only true from the zero-sum baseline. In real life, unsecured creditors may not exist, and risk of loss can be eliminated to the extent it stems from the risk of debtor misbehavior.

142 *See* Bebchuk & Fried, *supra* note 1, at 891-95.

143 *See id.* I have deconstructed this model into stages for analysis. *See infra* notes 146-78 and accompanying text.

Assets	**Liabilities**
$450,000[144]	$1,000,000

Value of old credit claims: $972,500[145]

Figure Fourteen
Stage One: Firm Before Loan

The assets are comprised of Blackacre, Whiteacre, and Greenacre, which have an aggregate value of $450,000. Bebchuk and Fried also intimate that, in the case of failure, the shareholders will have already raided the estate and will have stolen $8500, which is no longer part of the firm's assets.[146]

Significantly, there is a shortage of collateral in this model. If "collateral" (C) is defined as the downward limit of variance in firm value (V), this firm has only $450,000 of risk-free debt to issue. Since creditors at this point claim $1 million, the firm is incapable of retaining its three assets *and* collateralizing its creditors. This firm must either liquidate and pay its creditors or bind the creditors not to foreclose—i.e., turn debt into equity. These are necessary features of the zero-sum baseline.

The old creditors are the "nonadjusting" creditors. They have no ability to adjust to risk that is exported to them. Because debt at the first stage of the model is inherently risky, these creditors, if rational, will have demanded a risk premium. Bebchuk and Fried have asked us to assume that the premium—together with all transaction costs—is paid in advance.[147] Thus, the risk premium on the loan of $1 million is $27,500.[148] Since this amount is deemed paid in advance, the creditors have in essence advanced only $972,500 in exchange for a promise to receive $1 million in the future. In short, this is "original discount" debt.[149] The figure

---

144 This represents the combined value of Blackacre, Whiteacre, and Greenacre.

145 .05(450,000) + .95(1,000,000) = 972,500.

146 Bebchuk and Fried will stipulate that the first security interest eliminates $7500 in thefts. *See* Bebchuk & Fried, *supra* note 1, at 891-92. The second will eliminate $1000 in thefts. The third security interest has no effect on shareholder larceny.

147 *See id.* at 891 n.123.

148 x + .05(450,000) + .95(1,000,000) = 1,000,000; x = 27,500.

149 Contrary to what Bebchuk and Fried have stated, the risk premium has *not* been paid in advance. Rather, the creditors obtain the risk premium from the 95% of the firms that survived. The creditors only collect a pro rata portion of the risk premium from the 5% of the firms that fail. This is, however, merely a forensic point and does not detract from the analysis, which is defective for far more potent reasons.

$972,500 also comprises the market value of the old debt, as no costs have yet been exported to it.

From this baseline, the firm incurs another $2 million of debt. Given that the old creditors' $1 million claim has a market value of only $972,500 before the new credit appears, the infusion of new credit should have been good news. Assuming prudent investment and a return of $r = .1$, the firm's promise to pay $2 million should have yielded $1,981,034.48 in advances, and the balance sheet of the firm should have looked like this:

Assets	**Liabilities**
$450,000.00	$3,000,000
1,987,889.27	
198,788.93	
$2,636,678.20	

Value of old credit: $993,944.63[150]
Value of new credit: $1,987,889.27[151]

Figure Fifteen
Firm After Unsecured Loan with Proceeds Invested

After such a loan, the market value of the old debt claim would have increased by $21,944.63 to $993,944.63. The old creditors could only have benefited from such a loan.

It is a dogma of the zero-sum baseline, however, that new loan proceeds are never invested. Rather, they must disappear. So they do in the Bebchuk-Fried model. The new balance sheet therefore shows a theft of the $1,915,000 in new credit that was actually advanced:

Assets	**Liabilities**
$450,000[152]	$3,000,000
Value of old credit:	$957,500[153]
Value of new credit:	$1,915,000[154]

150 .05(1/3)(2,636,678.20) + .95(1,000,000) = 993,944.63.
151 .05(2/3)(450,000 + 1.1[2,000,000 – x]) + .95(2,000,000) = 1,987,889.27; x = 12,110.72.
152 This represents the combined value of Blackacre, Whiteacre, and Greenacre.
153 .05(1/3)(450,000) + .95(1,000,000) = 957,500.
154 .05(2/3)(450,000) + .95(2,000,000) = 1,915,000.

Figure Sixteen
Stage Two: Firm After Unsecured Loan with Proceeds Stolen

Because loan proceeds have been stolen, old creditors are worse off. New creditors, however, are happy because they have been promised a risk premium. This part of the Bebchuk-Fried model shows a debtor with infinite access to the credit market, because new credit is ever ready to finance shareholder thefts in exchange for the risk premium.[155]

At Stage Three, the firm issues the first security interest on Blackacre. As a result, the new creditors have a security interest worth $400,000, but the total assets have increased to $660,000. Hence:

Assets	**Liabilities**
$400,000 (encumbered)[156]	$400,000 (secured)
$260,000 (unencumbered)[157]	$2,600,000 (unsecured)
$660,000	$3,000,000
Value of old credit:	$955,000[158]
Value of new credit:	$1,928,000[159]

Figure Seventeen
Stage Three: Firm After Unsecured Loan with Proceeds Stolen

In Stage Three, the security interest is issued to the new lenders. The old lenders are unable to adjust their risk premium. In effect, the new lenders and the firm have coalesced to transfer wealth from the old creditors to the shareholders. But this wealth transfer is more than offset because Whiteacre and Greenacre have increased in value by $260,000. Bebchuk and Fried proclaim

---

155 I have suggested throughout this Article that, in the zero-sum models, the shareholders have infinite access to the credit market to fund shareholder defalcations. As an experiment, let us suppose the shareholders had a taste to steal whatever funds could be had for a promise to pay $100,000,000. A lender would gladly provide over $95 million on this formula: $x + .05(100/101)(450,000) + .95(100,000,000) = 100,000,000$; $x = 4,977,722.77$. On these numbers shareholders would obtain $95,022,277.23 in exchange for promising to pay back $100,000,000 later.

The $100,000,000 promise was unduly modest. The reader may substitute for $100,000,000 any number and determine how much shareholders might steal.

156 This number represents the value of the now-encumbered Blackacre.

157 This represents the combined value of Whiteacre and Greenacre.

158 $.05(1/3)(450,000) + .95(1,000,000) = 957,500$.

159 $.05(2/3)(450,000) + .95(2,000,000) = 1,915,000$.

this security interest to be efficient.[160]

Figure Eighteen represents the gains and losses to old and new credit in all five stages of the model:

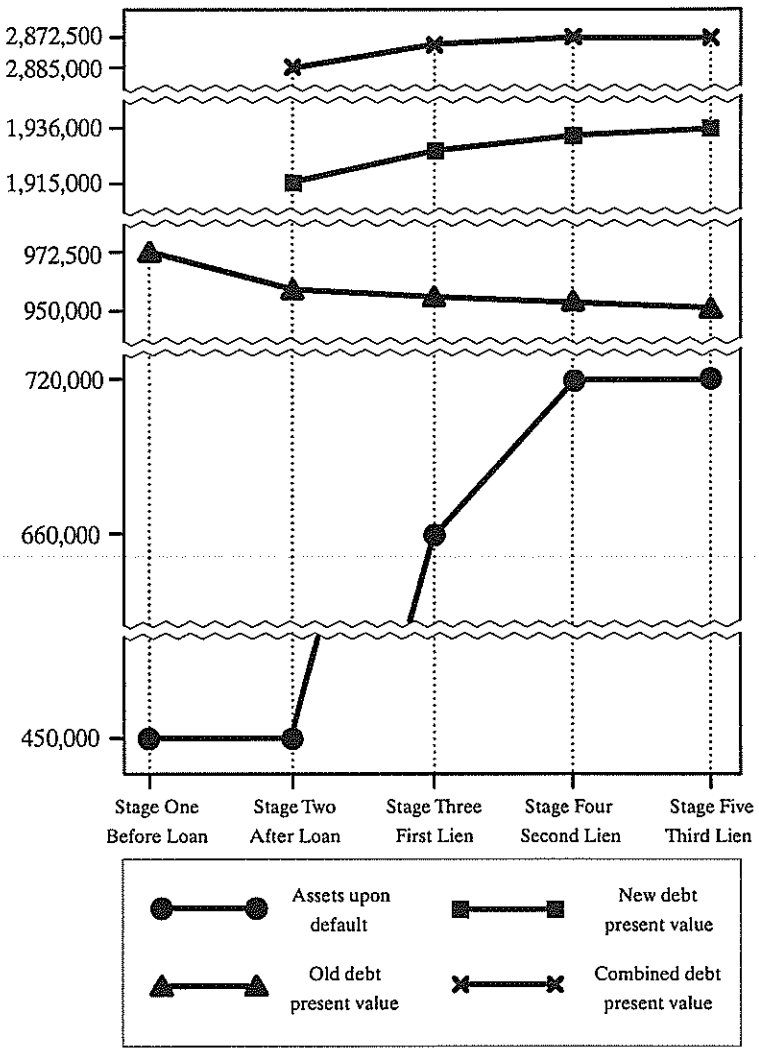

Figure Eighteen
Bebchuk & Fried's Five Stage Model

Figure Eighteen shows that, compared to Stage Two, the efficient security interest on Blackacre has increased the new credit claims by $13,000. It has decreased the old credit claim by $2500.

---

160 *See* Bebchuk & Fried, *supra* note 1, at 891.

The net gain to the creditors as a whole is $10,500, which equates with the discounted value added by the security interest.[161] But for the net gain, lending would have been a zero-sum game.

What is the nature of this wealth gain? The only difference between the firm at Stage Two and Stage Three is that Blackacre has been mortgaged. At Stage Three, Blackacre "is expected to have a value of $400,000 in the event of bankruptcy."[162] As will soon become clear,[163] the model assumes that Blackacre was worth $400,000 both before and after its encumbrance. Only Whiteacre and Greenacre increase in value as a result of Blackacre's encumbrance.

Is there any plausible story to explain why Whiteacre and Greenacre should become more valuable just because Blackacre is mortgaged? Wealth gains come from the movement of goods from a lower to a higher valuing user. This has not happened in the Bebchuk-Fried model, since no assets have changed hands. The same three assets are managed by the firm both before and after these security interests.[164] Indeed, the zero-sum baseline prohibits movement of goods to a higher valuing user, because investment would upset the law of conservation of risk. If investment exists, security interests might be relevant, contrary to the Modigliani-Miller baseline.

One source of value enhancement does find mention in the model itself. Bebchuk and Fried stipulate that, but for the security interest, the shareholders would have stolen $7500 from the firm. Thus, of the $210,000 wealth gain, $7500 is accounted for.[165] The

---

161 That is: .05(210,000) = 10,500.

162 *Id.* at 891.

163 *See infra* note 175.

164 Wealth gains might come from technological advances. For example, one of the claims in favor of leveraged buyouts is that, by concentrating ownership in the hands of management, agency costs (i.e., the incentive to slack off and take coffee breaks) will be reduced. Elimination of agency costs thus allows more revenue to be squeezed out of the same assets. *See* Carlson, *supra* note 8. Whether this is a wealth gain or merely a wealth transfer, no such phenomenon can be attributed to the Bebchuk-Fried model. Such a gain should have accrued when the firm borrowed $1,928,000 in unsecured credit. The loan proceeds might then have been upstreamed to the departing shareholders, and concentration of ownership in the hands of the managers would have eliminated agency costs. The gain in Stage Three of the model, however, does not come from leverage. Rather, it comes from the pure issuance of the security interest to one creditor who has already produced the leverage.

165 We have already seen that the shareholders have stolen $1,928,000 in loan proceeds. Bebchuk and Fried do not acknowledge this theft. They disclose only that the security interest in Blackacre prevents the theft of $7500. This $7500 in prevention can be viewed as a kickback from the shareholders to the creditors from the stolen loan proceeds. But Bebchuk and Fried fail to explain why the security interest should cause the shareholders

remaining $202,500 is mysteriously missing. Furthermore, no story is offered as to why the security interest so limits stealing. The estate still has unencumbered assets of $260,000. These assets too could have been stolen, and yet they were not. This matter is left unexplained. Finally, the fact that the creditors obtain $7500 that otherwise would have gone to the shareholders is not by itself an efficiency gain. Rather, it is a wealth transfer about which wealth maximization must be neutral, pending some genuine demonstration of a social loss or a social gain.

It must be concluded that Bebchuk and Fried have no discernable theory as to why the first security interest should increase the value of the second and third assets. The idea that Whiteacre and Greenacre become more valuable when the owner of those assets issues a security interest in Blackacre is not plausible. Indeed, increased price as such cannot be taken as a wealth gain in any case. If it did, famine would be efficient, because it raises the price of corn.

The first security interest on Blackacre generated external benefits for Whiteacre and Greenacre. The external benefit is said to be $10,500—the enhanced value of the total community of creditor claims.[166] This gain, however, has costs borne by the shareholders.

Thus, Bebchuk and Fried ask us to assume that the security interest had a one-time transaction cost of $2000. In addition, Bebchuk and Fried stipulate that the security interest prevents shareholders from stealing $7500 from the creditors. This private gain to the creditors is folded into the $660,000 available to the creditor community. Bebchuk and Fried call this loss of opportunity to steal a "cost."[167] In other words, they suggest that prevention of theft is a social evil. Thus, if the shareholders had been more covetous of gold—if they were inclined to steal $457,500[168]—the supposedly efficient security interest would never have come into existence, because its cost ($457,000) outweighs its benefits.

---

to kick back $7500.

166 As Figure Eighteen shows, the $10,500 gain represents a $13,000 gain for new credit and a $2500 loss for old credit.

167 Of Stage Three, Bebchuk and Fried write: "On these assumptions, encumbering [Blackacre] would increase the value of creditors' claims . . . by $10,500 while imposing $9500 of costs on Bank and Firm, leading to an efficiency gain of $1000." Bebchuk & Fried, *supra* note 1, at 891 (footnote omitted). This remark shows that prevention of theft is a social cost that offsets the gain in value to Whiteacre and Greenacre.

168 This number is comprised of the $450,000 that the shareholders could have stolen (but did not), plus the $7500 they did steal.

Oddly, Bebchuk and Fried imply that prevention of theft is an inefficiency of secured lending. If the shareholders were permitted untrammeled right of theft, the wealth gain of $260,000 would come into being. On the madcap logic of Bebchuk and Fried, the inability to steal is a wealth-destroying market defect.

To summarize, the first security interest issued in Stage Three raises firm value, but, given that the firm owns the same three assets both before and after Blackacre was mortgaged, this alleged efficiency gain is unconvincing. Bebchuk and Fried should have explained how the security interest enhances firm value. True, they have accounted for $7500 of the gain. This is the amount that remains with the creditors because the shareholders, for some reason, could not steal it. Ironically, this prevention of theft is portrayed as a social evil, because it nearly prevented the realization of a genuine wealth gain. The total social gain is said to be $260,000. The source of most of the gain is unaccounted for, and seems to be nothing but a higher market price for Whiteacre and Greenacre.[169]

Stage Four of the model shows the firm issuing a second security interest on Whiteacre:

Assets	**Liabilities**
$600,000 (encumbered)	$600,000 (secured)
$120,000 (unencumbered)[170]	$2,400,000 (unsecured)
$720,000	$3,000,000

Value of old credit:	$952,500[171]
Value of new credit:	$1,933,500[172]

Figure Nineteen
Stage Four: Firm After Second Security Interest

At Stages One and Two, Blackacre was worth $400,000 and

---

169 If the security interest on Blackacre magically makes Whiteacre and Greenacre go up in value, these gains would have to be discounted by the losses to competitors who have lost value thanks to the increased demand the failed firm is now enjoying. Thus, if the public bids up Whiteacre because the firm has encumbered Blackacre, the winner of the Whiteacre auction has withdrawn the winning bid from some other market. This fall in demand elsewhere is a countervailing cost of the gain that Bebchuk and Fried leave unacknowledged.

170 Greenacre is the last unencumbered asset.

171 .05(1/2.4)(120,000) + .95(1,000,000) = 952,500.

172 .05(600,000) + .05(1.4/2.4)(120,000) + .95(2,000,000) = 1,933,500.

Whiteacre and Greenacre were worth $50,000. At Stage Three, however, Whiteacre increased in value to $200,000 and Greenacre increased in value to $60,000. Now, at Stage Four, Whiteacre is encumbered, and Greenacre doubles in value to $120,000. Such an increase in value, once again, is left unexplained.

The second security interest has increased the total value of all claims to $2,886,000, a gain of $3000. This gain, however, brings with it private costs to the shareholders. First, the shareholders paid $1000 in transaction costs for the second security interest. Besides the $1000 in transaction costs, an additional $1000 in thefts are prevented. Hence, the second security interest comes into existence because $3000 in gains outweigh $2000 in costs.

In Stage Five, the third security interest is issued, with the following balance sheet if the firm fails:

Assets	**Liabilities**
$720,000 (encumbered)	$720,000 (secured)
	$2,280,000 (unsecured)
	$3,000,000

Value of old credit:	$950,000[173]
Value of new credit:	$1,936,000[174]

Figure Twenty
Stage Five: Firm After Third Security Interest

In Stage Five, the third security interest is said to be socially inefficient. It created no gains. The earlier security interests had the effect of exporting value to the unencumbered assets of the firm. The firm has no unencumbered assets at Stage Five. Ac

---

173 .05(0) + .95(1,000,000) = 950,000.
174 .05(720,000) + .95(2,000,000) = 1,936,000.

cordingly, there can be no gains.[175] New credit is now willing to lower the risk premium by $2500. But new credit has incurred new transaction costs of $1000 in exchange for the third security interest. Because the $2500 savings exceeds the $1000 cost, the firm still issues this security interest.

Is the third security interest inefficient? Bebchuk and Fried say so, but this conclusion, once again, must be challenged. The $2500 in lower risk premium simply represents a transfer of wealth from the creditors to the shareholders of the firm. This is no wealth loss, but only a wealth transfer.

Furthermore, just because the firm undertakes a private transaction cost does not prove that society has suffered a social loss. For example, suppose the $2000 went to a lawyer. The $2000

---

175 I have maintained that Bebchuk and Fried's implicit theory is that the mere encumbrance of an asset exports value to a firm's unencumbered assets. I have investigated one other possibility: that the enhanced value is distributed over encumbered and unencumbered assets alike. If that were the case, then the schedule of valuations would be:

Number of Security Interest	Blackacre	Whiteacre	Greenacre
0	$272,272.72	125,000	52,272.72
1	400,000	183,333.33	76,666.66
2	436,363.63	200,000	83,636.36

In Stage Five, it becomes clear that the first two security interests did not make all *three* assets proportionately more valuable. Rather, the first two security interests exported benefit to the unencumbered assets. This is so because, according to the above schedule of proportional value, Greenacre was worth only $83,636.36. Yet, after Greenacre is encumbered, it is said to be worth $120,000. Hence, it is clear that, at the earlier stages, the security interest did not make the encumbered items more valuable. Only the unencumbered items increased in value. We must now reconceive the schedule of assets as follows:

Number of Security Interest	Blackacre	Whiteacre	Greenacre
0	$400,000	(50,000-y)	(50,000-x)
1	400,000	200,000	60,000
2	400,000	200,000	120,000
3	400,000	200,000	120,000

This schedule is the only one that reconciles all stages of the model. Hence, the model is premised on the notion that a security interest makes a debtor's unencumbered assets more valuable.

in wealth is not "lost." Rather, it is in the pocket of the lawyer. Hence, the social cost is by no means $2000. The usual response to this simple observation is that, if the transaction cost had been eliminated, the lawyer would have been free to do something more socially useful with her time. The social loss is then the net loss of utility because the lawyer was beguiled into working on the inefficient transaction.[176] Whether this response holds up is strictly an empirical question. There is no logical reason to suppose that the lawyer would do something more socially useful but for the inefficient security interest—though it might empirically be the case from time to time. The lawyer's next best opportunity may be socially more harmful than the comparatively benign theft she is helping to perpetuate in Stage Five.[177]

To summarize, in their model, Bebchuk and Fried have no good theory of why secured lending might be efficient. They imply that security interests export value to a firm's unencumbered assets. The grocer who encumbered her carrots thereby makes her unencumbered peas more valuable. Why should I develop a taste for peas just because my grocer has encumbered her corn?

If we ignore the first two efficient security interests as insufficiently explained, we are left with the third security interest, issued according to the zero-sum baseline. Bebchuk and Fried suppose this security interest to be inefficient because it is motivated by wealth transfers from the unsecured creditors to the shareholders of the firm. Yet wealth transfers are not wealth losses. Their theory reduces to the zero-sum proposition that risk is never created or destroyed in lending markets.[178]

---

176 Even if we assume that the lawyer can be driven to more socially useful projects if only we were to eliminate the inefficient security interest, it by no means follows that the social loss is $2000. Rather, it is the loss of the social utility that otherwise would have been created but for the security interest. If the lawyer's next best opportunity was to create a wealth gain of $1900 for a fee of $1800, the loss because of the inefficient security interest is $100, not $2000. *See* David Gray Carlson, *Debt Collection As Rent Seeking*, 79 MINN. L. REV. 817 (1995).

177 Bebchuk and Fried have proposed that bankruptcy lawyers be made ineligible to receive compensation from the tax. *See* Bebchuk & Fried, *supra* note 127, at 1335-36. But such a proposal can only be based on class bias, rather than economics. With a Pigouvian tax, it matters not who receives the tax. It matters only that externalities are internalized in the calculations of the taxpayers. *See, e.g.*, Robert Cooter, *Prices and Sanctions*, 84 COLUM. L. REV. 1523, 1536 (1984).

178 The Bebchuk-Fried thesis gets a very strange reading indeed from Alan Schwartz. According to Bebchuk and Fried, as interpreted by Schwartz, firms are subject to the law of conservation of risk per zero-sum assumptions. C_2, however, cannot discern whether or not C_1 took a security interest, except at prohibitive cost. C_2 does know the probability of C_1 having a mortgage. C_2 therefore charges an average rate to all debtors. Good debtors pay too much for C_2's loan. Bad debtors pay too little. *See* Alan Schwartz, *Priority Con-*

B. *Proposals*

In the above model, Bebchuk and Fried claim to have demonstrated that some security interests are efficient and some are not. They make no attempt to quantify whether the efficient or inefficient security interests predominate. Indeed, at one point they suggest that not even firms who issue security interests know whether or not they enhance firm value.[179] Given such a lack of knowledge, there is no sense in trying to make policy on the basis of wealth maximization. To do so would be irresponsible and unscientific. In the words of Alan Schwartz:

> [I]t is not known with assurance whether security is efficient . . . . With the record in this state, it may seem appropriate for a decision maker to pursue whatever normative views respecting bankruptcy liquidations he happens to hold.[180]

Nevertheless, Bebchuk and Fried do not hesitate to offer two

---

tracts and Priority in Bankruptcy, 82 CORNELL L. REV. 1396, 1414-15 (1997).

Bebchuk and Fried must be read as emphasizing the inability of preexisting lenders to adjust interest rates in reaction to subsequently created security interests. Under Schwartz's reinterpretation of their theory, all creditors adjust, and recoup through a pooling equilibrium—clearly not Bebchuk-Fried's point. Also, under Schwartz's interpretation, C_2 never considers taking a security interest herself. Yet the ex post issuance of a security interest to C_2 is central to the Bebchuk-Fried thesis. Hence, Schwartz has attributed views to Bebchuk and Fried that they do not hold.

Schwartz has no trouble defeating the thesis he wrongly attributes to Bebchuk and Fried. All firms issue a security interest to C_1, says Schwartz, in order to prevent C_2 from being overcompensated, in light of C_2's later "adjusting" loan; or firms advertise that C_1 has no security interest, thereby justifying a lower rate from C_2. These are undoubtedly good refutations.

179 Bebchuk and Fried write:

> In the case in which all of a firm's nonadjusting creditors are voluntary and well informed, one might think that a firm would be better off contracting in advance not to inefficiently encumber any asset. However, such a commitment would require that the firm know in advance that it would be inefficient to encumber particular assets. Under the reasonable assumption that it is difficult to acquire this knowledge in advance, it would not be in a firm's interest to make such a commitment because it might prevent it from creating an efficient security interest.

Bebchuk & Fried, *supra* note 1, at 894-95. There is much wrong with this passage. First, a quick review of Figure Eighteen reveals that the first two efficient security interests actually *hurt* the nonadjusting creditors. Hence, a covenant against inefficient security interests, however public in spirit, would not be as desirable to the unsecured creditors as a straight anti-pledge covenant. Second, if the firm actually issuing the security interest cannot know the social or even the private effect of what it is doing, one may question whether law professors will have the knowledge on which to ground important social proposals.

It should also be noted that, in their repetition of the theory in 1997, Bebchuk and Fried have proclaimed the net efficiency as "likely." *See* Bebchuk & Fried, *supra* note 127, at 1331. The reason: "nonadjusting" creditors will adjust in order to let efficient projects come into existence. *See id.* at 1335; *see also infra* text accompanying notes 190-91.

180 Schwartz, *supra* note 10, at 33.

alternative policy suggestions. First, they suggest that secured claims be subordinated only to those creditors who have been exposed to uncompensated risk.[181] Second, they suggest that all secured claims be taxed by 25% in bankruptcy proceedings in order to make secured credit more risky.[182]

The Bebchuk-Fried article asserts (but never proves) that, while secured lending can be efficient, it can also be motivated by externalizing costs. Therefore, the first proposal—selected subordination—can be understood as an attempt to internalize the risk that the secured creditor's loan will impose on third parties. The subordination rule, at least, attempts to visit the tax where secured transactions do their greatest harm. Bebchuk and Fried, however, are discouraging about this proposal because "it would clearly not be feasible to determine whether each creditor had in fact 'adjusted' to each particular security interest."[183] "[O]ne may nevertheless believe that such a rule would be undesirable because of the uncertainty it would create for secured creditors,"[184] they write. The best that could be done are some rough rules of thumb: legislation could assume that tort and tax creditors were nonadjusting, for example.[185]

The second proposal—a 25% tax on all secured credit—depends upon the premise that the bad security interests outweigh the good. Since the tax must be paid by good and bad alike, the tax is efficient only if the bad predominates over the good. This failure to quantify the good versus the bad constitutes a galloping non sequitur insofar as this general tax is concerned. Their defense:

> [O]ur analysis relies only on the fact that, with respect to every borrower, there invariably exist nonadjusting creditors, that is, creditors that do not adjust the size of their claims against the borrower when the borrower creates a security interest in favor of another creditor. This alone is sufficient to give rise to the inefficiencies we identify.[186]

In fact, it is not a sufficient justification of the general tax to point out that nonadjusting creditors exist in every case. The tax could be inefficient when such creditors are present. Suppose a

---

181 *See* Bebchuk & Fried, *supra* note 1, at 905-09.

182 *See id.* at 909-11.

183 *Id.* at 908.

184 *Id.* at 909.

185 *See id.* at 908.

186 *Id.* at 865-66; *see also id.* at 911 (maintaining that the tax "would certainly be preferable to the currently prevailing de facto rule of partial priority").

firm proposes to buy an asset for $100 that would be worth $101 under the firm's management. The firm could borrow $100 risk-free if it issues a security interest on the purchased asset. It must pay a $11.11 risk premium if it borrows unsecured, because there is a 10% chance of default.[187] If the loan must be unsecured, the deal does not pay. A 25% tax on the secured transaction, however, means that the secured creditor must charge $2.02 for the loan.[188] The tax means that the firm cannot make this efficient investment. On these numbers, the tax is inefficient. To justify the general tax, Bebchuk and Fried must assure us that the tax prevents more losses than gains. This is done nowhere in their article.

One need only contemplate the effect of the 25% tax on the residential housing market. With homes already out of reach of most young Americans entering the work force, what chance would they have in obtaining a mortgage if lending institutions know that at least 25% or more of all collateral would have to be contributed to the unsecured creditors a consumer might have?[189] This rule would drive mortgage rates through the ceiling, dry up the real estate market, and lower the standard of living for working Americans everywhere. Nationwide, and probably worldwide, recession would surely follow. Palpably, the 25% tax on secured lending is a half-baked idea.

In a recent reprise of their article, Bebchuk and Fried more forthrightly own up to this problem. While they remain unable to assure us that inefficient security interests outweigh the efficient ones, they suggest that, when a proposed "investment" is efficient, the nonadjusting creditors would agree to waive the 25% tax.[190] As a result, the tax is imposed against inefficient deals and waived with regard to efficient ones.[191]

This claim is not acceptable. Since each creditor must waive the tax individually, holdout problems and coordination costs should abound, preventing any such consent from coming into existence. Furthermore, it must be noted that these creditors are described by Bebchuk and Fried as *nonadjusting*. Is it plausible to accept that, in order to save this tax from an analytic flaw, the

---

187 The unsecured creditor would demand a risk premium of $11.11 on the following formula: $.1(10) + .9(x) = 101; x = 111.11$.

188 $.1(75.75) + .1(25/100)(24.25) + .9(x) = 100; x = 102.02$.

189 *See* Bebchuk & Fried, *supra* note 127, at 1323-24 (making clear that no amount of extra collateral will relieve secured creditors from the proposed tax).

190 Of course, no investment occurs in the Bebchuk-Fried model. *See supra* text accompanying notes 164-65.

191 *See* Bebchuk & Fried, *supra* note 127, at 1335.

nonadjusting creditors magically become adjusting? If they could adjust all along, then the tax is unnecessary, because these creditors can write loan contracts that discipline the firm against inefficient deals. This particular defense (nonadjusting creditors will adjust to an inefficient tax) undercuts their entire thesis that unsecured creditors are nonadjusting and that secured lending is theft.

C. *Some Non-Zero-Sum Assumptions*

Bebchuk and Fried often assume a zero-sum baseline, but sometimes they do not. One of their illustrations[192] is intended to show that security interests distort a firm's choice between unsecured credit (with covenants) and a security interest. In this model, the security interest comes in two versions. First, the secured creditor is entitled to the collateral, as in present law. Second, the secured party takes security interest but must share the collateral with the community of creditors. In effect, a 100% tax is imposed on secured lending. The creditors can take security interests, but they must use them for the benefit of the class of all creditors. These two security interests are compared to restrictive covenants.

In this model Bebchuk and Fried concede that debtor misbehavior is possible, and that security interests and covenants are competing techniques for preventing theft from the community of creditors.[193] As such, this model is superior to their zero-sum model. In their previous zero-sum model, the efficiency of secured

---

192 *See* Bebchuk & Fried, *supra* note 1, at 897-98.

193 Bebchuk and Fried refer to prevention of "inefficient asset dilution." *Id.* at 897. This phrase suggests that the firm might contract for more debt without obtainment of compensating assets. By this I take Bebchuk and Fried to mean that shareholders will make suboptimal gambles with money the creditors would otherwise get. Oddly, this model shows no new debt, once the initial contracts are made.

From the creditors' perspective, bad gambles are just a form of theft. Instead of just stealing assets, the firm is willing to gamble the proceeds and return the embezzled amount in case of a win. The gamble produces an instant transfer of wealth from the creditors to the shareholders. Economically, they might as well have stolen some percentage of the assets with certainty than a larger amount with uncertainty.

This is the private state of affairs. Publicly, asset dilution creates a social loss only when the firm turns from an opportunity of which it was the highest valuing user to a riskier (but privately profitable) opportunity of lesser value. The public loss is the difference between the firm's best opportunity and the one it actually took.

In any case, "inefficient asset dilution" cannot describe the Bebchuk-Fried model. Gambling with other people's money in this way would prevent any a priori predictions about the efficiency of covenants. That is, Bebchuk and Fried proclaim a certain unsecured covenant to be efficient compared to secured lending on an a priori basis. Such a conclusion cannot hold if funds are invested rather than stolen. The model would turn on the quality of the gamble and hence would lose its a priori value.

lending was a magic event. Now security interests and covenants prevent defalcations—a more realistic theory. Of course, private wealth transfers are not necessarily public wealth losses. But fear of wealth transfers may deter investment, and productive assets may not move into the hands of the highest valuing user, given these fears. In this model, Bebchuk and Fried are on a more promising path toward good economic theory.

This is not to say they reach their destination. The model promises to show that inefficient secured lending may eclipse efficient unsecured covenants. A 100% tax on secured lending is supposed to produce efficiency. It does no such thing, however. The firm sticks with the inefficient secured loan in spite of the tax.

This second model has four stages:

(1) Before the loan, the firm already owes $1 million. We do not know what assets the firm will have in case of failure, nor do we know what chance the firm has to fail. It is possible to say that the firm has a 100% chance of failure unless it obtains a loan, and that old debt has a value of zero, because the firm has no assets. We will so assume for ease of exposition.

(2) The firm proposes to borrow $1 million each from two different creditors—for a total of $2 million in new credit. The firm will actually buy a productive asset. With this asset in place, the firm has a 95% chance of success and a 5% chance of failure. This asset is sufficiently attractive to the shareholders that, whatever the terms of the purchase money loan needed to buy the asset, the deal will definitely go forward. The only question is how the ownership of the asset shall be divided between the shareholders and the creditors.

The alert reader by now shall have spotted a difficulty with the model. If the terms of the loan do not impede the deal, then it is hard to see how efficiency is at stake. Efficient allocation of entitlements suggests movement of goods to a higher valuing user. If that movement is guaranteed, the terms of the loan would seem not to be outcome determinative. Indeed, this premonition will come true. Bebchuk and Fried have not modeled efficient unsecured lending. Rather, they have only modeled a covenant that transfers wealth from shareholders back to unsecured creditors. Such a wealth transfer is a private wealth gain to the unsecured creditors, but it is canceled out precisely by the wealth loss to the shareholders. Bebchuk and Fried continue to be entranced by a law of conservation of risk—even though their model implies an efficient investment after Stage One.

After Stage Two, the negotiating parties contemplate a device to prevent debtor misbehavior. If one of the new creditors takes a security interest in $1 million of assets, the estate, upon failure, will be worth $1.2 million. At Stage Two, a standard security interest is issued to one of the new creditors. Upon default, the new secured creditor is entitled to keep the $1 million in proceeds. The new unsecured creditor splits the remaining $200,000 with old creditors.

(3) The new secured creditor still has a security interest but now the security interest is taken for the benefit of all creditors. The estate, upon failure, is still worth $1.2 million. Each creditor (including the secured creditor) is entitled to one-third of the estate, or $400,000.

We may pause to consider the nature of the security interest in Stages Two and Three. It appears from the model that the security interest is the power to shut down the firm and force a liquidation. At Stage Two, the secured creditor, who lent $1 million, is plausibly apathetic about using this power until the worth of the firm begins to approach the $1 million level. New unsecured credit, seeing this, charges a risk premium on the assumption that such secured creditor apathy will occur.

Yet such a definition of the security interest cannot hold at Stage Three, where the secured creditor must share proceeds with her brother creditors. At Stage Three, if the secured creditor waits until the estate is worth only $1.2 million, the secured creditor is radically undersecured. If we conceive of firm value as a continuous function, then the secured creditor has the incentive to shut down the firm when the estate is worth $3 million. Only then will the secured creditor avoid losses. Yet the secured creditor accepts a risk premium reflecting the firm's power to denigrate the estate until it is worth only $1.2 million. This risk premium implies a contractual disability from using the security interest at any earlier time. In short, the firm has paid new credit for the privilege of raiding the estate at the expense of old and new creditors alike. The security interest at Stage Three, then, is artificially restricted in its power—something Bebchuk and Fried do not acknowledge.

(4) Stages Two and Three involved alternative security interests. As a substitute for a security interest, new credit is given antipledge covenants. At Stage Four, the estate, upon failure, is worth $1.5 million, which the old and new creditors share pro rata. The covenant is efficient compared to either security interest precisely because new credit can shut down the firm when the estate's worth depreciates to $1.5 million. Before, their power was impotent until

the firm declined to $1.2 million.

Figure Twenty-One diagrams the firm in light of the $2 million of new credit and a new profitable investment:

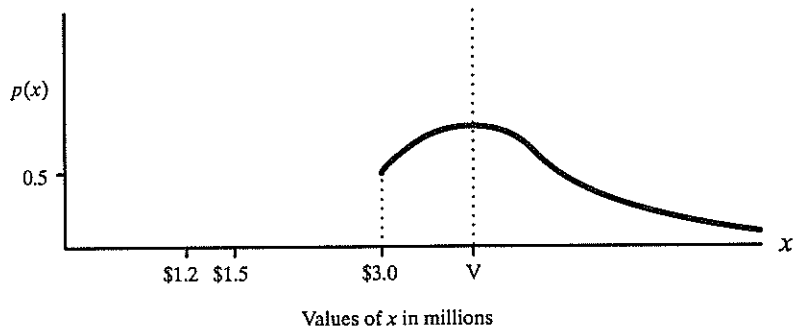

Figure Twenty-One
Efficient Covenants

In this model, the ordinate is probability of outcome. The abscissa is x, a random variable of V. V continues to represent the weighted average of all possible outcomes. I have added the assumption that $V > \$3{,}000{,}000$.

The only difference between Stage Two, on the one hand, and Stage Four, on the other, is the worth of the firm in case of failure. By moving from Stage Two to Stage Four, old credit instantly gains $20,000: that is, old credit moves from .05(.5)($200,000) = $5000,[194] to .05(1/3)($1,500,000) = $25,000. This gain is shown in Figure Twenty-Two:

[194] Since the secured creditor takes the first $1 million from the bankruptcy estate (worth $1.2 million), the remaining $2 million in credit claims each split the remaining $200,000 between them.

	Old Creditor Value	New Credit Price
1. Before loan	0[195]	---
2. Security interest (new creditor keeps proceeds)	955,000[196]	45,000[197]
3. Security interest (proceeds shared)	970,000[198]	60,000[199]
4. Covenant	975,000[200]	50,000[201]

Figure Twenty-Two
Disincentive to Choose Covenants

The first column in Figure Twenty-Two shows the three deal structures in ascending desirability from the standpoint of nonadjusting credit. The second column shows how much Bebchuk and Fried say $2 million in new credit will cost the firm.[202] A comparison of the second and fourth rows shows a $20,000 gain to old credit as a result of the covenant.

Bebchuk and Fried propose that, if the secured creditor must share proceeds with all creditors (a 100% tax), the security interest becomes more expensive for the firm than the covenant. Accord-

---

195 The assumption of zero market value is permitted but not required in this model.

196 .05(100,000) + .95(1,000,000) = 955,000. Old credit gets 50% of debtor equity after the new secured creditor takes $1 million from the bankruptcy estate (worth $1.2 million).

197 x + .05(1,100,000) + .95(2,000,000) = 2,000,000; x = 45,000. The figure $1.1 million represents $1 million to the new secured creditor and $100,000 (50% of debtor equity) to the new unsecured creditor.

198 .05(400,000) + .95(1,000,000) = 970,000.

199 x + .05(800,000) + .95(2,000,000) = 2,000,000; x = 60,000. This result represents a 100% tax on secured lending. If the 25% tax had been used here, x = 50,000. But such a number conflicts with the number produced *infra* note 201. Hence, this model traffics in a 100% tax.

200 .05(500,000) + .95(1,000,000) = 975,000.

201 x + .05(1,000,000) + .95(2,000,000) = 2,000,000; x = 50,000.

202 One perplexing feature of this model involves the assumption that all debt is original discount debt. In effect, the firm borrows *different amounts* depending on whether the security interest or the covenants are chosen. If the debtor chooses the security interest (with priority to the purchase money lenders), the loan proceeds are $2 million, minus the risk premium of $45,000, or $1,955,000. If the covenant is used, the amount of loan proceeds realized is $2 million, minus the risk premium of $50,000, or $1,950,000. What happens to the $5000 difference is not disclosed in the model. Perhaps it was stolen.

ingly, the firm issues the covenant and thereby enriches the old creditors.

This prediction, however, is based on an error. Both the security interest and the covenants deter debtor misbehavior. That is, theft is prevented. Hence, nonadjusting credit becomes richer, but only because the shareholders become poorer.[203] If the covenants transfer $20,000 to the creditors (in comparison to the security interest),[204] then obviously the wealth must come from somewhere. In the first model, when the firm and the secured creditor combined to impose risk on the unsecured creditors, wealth was transferred from the unsecured creditors to the shareholders of the firm.[205] If Bebchuk and Fried were right about the flow of wealth in their first model, the converse must be true in their second model. It therefore follows that, if wealth is now traveling in the opposite direction, shareholders are becoming poorer.

In their article, Bebchuk and Fried have in mind a *private gain* to the creditors of $15,000. If so, then shareholders must sustain a *private loss* of $15,000.[206] Hence, if new credit charges the shareholders $50,000 for the unsecured loan plus covenants, $15,000

---

203 Bebchuk and Fried deny this. *See* Bebchuk & Fried, *supra* note 1, at 906 ("[A]doption of the set of covenants would be more efficient because, in the event of bankruptcy, creditors would be $300,000 better off than if the security interest were used, while shareholders would be no worse off (before interest is paid)."). It may be true that, *in the event of bankruptcy*, the shareholders are no worse off, because shareholders are junior to creditors in bankruptcy. But, at the time of the deal, the shareholders sacrifice $65,000 to enhance the present value of all creditor claims. The $65,000 sacrifice is explained *infra* note 206.

204 The present value of the bankruptcy estate (given the 5% failure rate) was $5000 where the ordinary security interest was issued. That same number is now $25,000 when the covenant is issued and old credit obtains one-third of the enhanced bankruptcy estate: .05(1/3)(1,500,000) = $25,000. The covenant therefore brings $20,000 in new value to old credit.

205 *See supra* text accompanying note 175. In a later model, Bebchuk and Fried assume that covenants prevent shareholder defalcations. The prevention of the defalcation does not increase the size of the bankruptcy estate, but it reduces the chance of default from 5% to 4%. *See* Bebchuk & Fried, *supra* note 1, at 901. That Bebchuk and Fried should count shareholder defalcations in that model but not here constitutes a contradiction.

206 .05(300,000) = 15,000. How did old credit gain $20,000 from Stage Two to Stage Four, while the shareholders surrendered only $15,000? This can be seen by mediation of Stage Three. When we moved from Stage Two to Stage Three, old credit gained $15,000. All of this gain came from new credit, which responded by raising the price of credit by $15,000. At Stage Three, the price of the loan was $60,000. At Stage Four, the shareholders convey $15,000 to the creditors—.05($300,000) = $15,000. Old credit received $5000, its pro rata share. This brings the old credit gain up to $20,000. New credit took the other $10,000, but it lowered the price of the loan from $60,000 to $50,000. Hence, the cost of the covenant at Stage Four was the $50,000 loan price, plus the $15,000 contributed to the creditors as a group. The firm therefore prefers secured credit, contrary to what Bebchuk and Fried have written.

must be added to this. As a result, the shareholders bear a private loss of $65,000—the risk premium plus the loss of a chance to steal from the firm in case of insolvency. Accordingly, the firm prefers the security interest in either of its forms to the covenants. The model is therefore a failure in its *result*. Its *methodology*, however, represents a modest step up from their earlier reliance on the zero-sum baseline. At least an *investment* occurs in this model. But because the deal goes forward no matter what the financial structure, Bebchuk and Fried can show no social significance to the financial structure of the transaction. Indeed, the model shows nothing at all, because the 100% tax on secured lending did not affect the structure of the deal.

D. *A Mixed Zero-Sum/Investment Model*

In a different model, designed to show that a seemingly efficient investment is really inefficient because it is based upon exporting costs to the nonadjusting creditors,[207] Bebchuk and Fried actually shift from an investment model to a zero-sum model in midstream. This covert change of assumptions invalidates their findings.

In this model, Bebchuk and Fried imply a firm with the following balance sheet, prior to obtaining a loan:

Assets	**Liabilities**
$0	$1,000,000

Value of old credit: $0

Figure Twenty-Three
Firm Before Loans

At this earlier period, the firm has no assets and a nonadjusting credit claim for $1 million.[208]

That the nonadjusting claim is "old debt" prior to the investment is by no means clear from the text of the Bebchuk-Fried article. They write:

> For concreteness, let us assume that Firm borrows $1 million from Bank and owes the government another $1 million. . . .

---

207 *See id.* at 918-99.

208 Other balance sheets could have been concocted consistent with this model, but, as zero and 100% are convenient numbers and fully permitted by the model, we will so assume.

> [S]ince the government is nonadjusting, the size of its claim will be the same under either rule.[209]

This sentence perhaps suggests that Firm owes $1 million whether or not the investment goes forward. But it is also possible to suppose that the government's claim is *caused* by the investment itself—some sort of environmental tort claim, for instance. If so the balance sheet in Figure Twenty-Two would show no assets and no liabilities.[210] I will return to this possibility later. For now, I will assume that nonadjusting debt is "old debt."

In Figure Twenty-Three, the firm buys a project with a new loan of $1 million. In this respect the model departs from the zero-sum baseline. Bebchuk and Fried do not disclose the odds for default, but, if all the assets are encumbered, then the default rate works out to be 12%.[211] Figure Twenty-Four represents the balance sheet of the firm should there be a default:

Assets	**Liabilities**
$333,333.33	$2,000,000
Value of old credit:	$880,000[212]
Value of new credit:	$920,000[213]

Figure Twenty-Four
Firm After Loans

By stipulation, the project purchased with new credit increases the shareholders' welfare by $85,000.[214] This is not shown in Figure Twenty-Four, which only represents the firm in default. Eighty-eight percent of the time the firm does not default. Implicitly, the $85,000 gain to the shareholders is to be found there.

Notice, however, that the nonadjusting government claim has increased in value from zero to $880,000. The nonadjusting creditors have been very generously treated indeed. Beginning with a claim worth zero, they end up with a claim worth $880,000. This

---

209 Bebchuk & Fried, *supra* note 1, at 918.

210 I would like to thank Steve Harris for pointing out this second possible reading of the Bebchuk-Fried model to me. *See* Steven L. Harris & Charles W. Mooney, *Measuring the Social Costs and Benefits and Identifying the Victims of Subordinating Security Interests in Bankruptcy*, 82 CORNELL L. REV. 1349, 1362-63 (1997).

211 This is apparent from the calculations in the next two footnotes.

212 .12(0) + .88(1,000,000) = 880,000.

213 .12(333,333.33) + .88(1,000,000) = 919,999.99

214 *See* Bebchuk & Fried, *supra* note 1, at 919.

generosity was quite gratuitous. The firm could have separately incorporated this project and borrowed from the secured creditor through this new entity. Under either the full priority rule or the partial priority rule the authors advocate, this firm would then have paid a risk premium of $120,000, and the value of the equity would have been $885,000. There is no reason in this model why the shareholders should have sacrificed $880,000 in profit to the nonadjusting unsecured creditors.[215]

Be that as it may, suppose now that the 25% tax on secured lending were in effect. Under such a rule, the secured creditor supposedly would have charged $90,000 for the purchase money secured loan.[216] As Bebchuk and Fried see it, the gain to the shareholders was only $85,000, and the investment cannot come into being.[217]

Bebchuk and Fried applaud this result because they think the investment is inefficient on these premises: (1) Under the disfavored full priority rule, the shareholders have gained $5000 (an in-

---

215 In their recent update to their theory, Bebchuk and Fried present only one new economic model. *See* Bebchuk & Fried, *supra* note 127, at 1333-34. Out of personal weariness, I have withheld a demonstration that this new model does not hang together and is no better than the models in their original article. I will only point out that if the firm in their example had separately incorporated the new investment, the shareholders would have been much advantaged, since they would not have to share the upside with old creditors.

Apparently I am not the only critic who pointed out that limited liability law destroys their models. Bebchuk and Fried, in their new article, claim that separate incorporation is too costly and therefore will not occur. Corporate lawyers, however, assure me that separate incorporation is quite cheap.

Bebchuk and Fried also suggest that bankruptcy courts could pierce the corporate veil and bring the efficient investment under the control of the unsecured creditors of the old entity. There is little doctrinal justification to think this would be done, however. In addition, they point out that, if the parent corporation does not share profits with the old creditors, the parent will lose out because adjusting creditors will not lower their interest rates as a reward for the share in profits. It is easy to see, however, that a dollar of profit reserved for the shareholders is more valuable than a dollar that must be shared with old creditors, even when old creditors lower their interest rate. Also, let us remember that the premise is that the old creditors in the Bebchuk-Fried models are nonadjusting and therefore would not lower their interest rates in any case.

216 $x + .12(.75)(333,333.33) + .88(1,000,000) = 1,000,000$; $x = 90,000$. This formula, implicit in the Bebchuk-Fried article, assumes that the secured creditor does not share in the 25% contributed to the unsecured creditors. It is not part of their stated rule that the unsecured deficit of the undersecured creditor be subordinated to the unsecured claims of all creditors. *See* Bebchuk & Fried, *supra* note 127, at 1322-23 (asserting that an unsecured deficit should share pro rata with other unsecured claims). If we allow the undersecured creditor to share pro rata in the proceeds of the tax (as they do elsewhere in their article), the correct risk premium would be: $x + .12(.75)(333,333.33) + .12(.75/1.75)(.25)(333,333) + .88(1,000,000) = 1,000,000$; $x = 81,814.28$.

217 Actually, it would come into being because the risk premium was really only $81,814.28, not $90,000. *See supra* note 216.

crease in equity value by $85,000, minus an $80,000 risk premium already paid to the undersecured creditor); (2) the nonadjusting creditors have lost $10,000.[218] Since the costs are $90,000[219] and gains only $85,000, the investment stands condemned.

But in so concluding, Bebchuk and Fried compare apples to oranges. They should have compared the nonadjusting creditor's position before the purchase money deal and after. Such a comparison shows the nonadjusting creditor has gained $880,000, far outweighing any cost. Instead, they took the nonadjusting creditor's position, assuming the investment had gone forward under the full priority rule. With the investment in place, the nonadjusting creditor's claim was worth $880,000. They then compared what the nonadjusting creditor would have received under the 25% tax. Under these assumptions, the nonadjusting claim was worth $890,000.[220] Hence, moving from partial priority to full priority, the nonadjusting creditor supposedly lost $10,000.[221]

Incredibly, Bebchuk and Fried forgot the premise of the model—that, under the 25% tax, the investment is never made in the first place. Under their partial priority rule, the nonadjusting creditor's share is worth zero. Hence, *anything* it gets under the full priority rule is a gain, not a loss.

The above analysis assumes that nonadjusting debt was old debt. Suppose now that nonadjusting debt is not old debt. Rather, the government's claim is *caused* by the investment itself. This assumption cannot save this particular model, and once again they compare apples to oranges.

Under this assumption, the government gains nothing from the investment, as was the case when the government's claim antedated the investment. If the investment brings the government's $1 million claim into existence, full priority to Bank means that the government loses $120,000.[222] If the investment never occurs, the government loses nothing. Bebchuk and Fried, however, assert that the cost of full priority to the government is $10,000.[223] This lesser cost is the difference between the investment under full pri-

---

218 This was miscalculated as well, because Bebchuk and Fried forgot to give the secured creditor a pro rata share of the 25% tax on the collateral. Under the 25% secured lending tax, the value of the nonadjusting claim is: .12(1/1.75)(.25)(333,333.33) + .88(1,000,000) = 885,714.28. The loss therefore should have been reported as $5,714.28.

219 Actually, $87,528.56.

220 .12(.25)(333,333.33) + .88(1,000,000) = 889,999.99.

221 Actually, $5714.28.

222 1,000,000 – [.12(0) + .88(1,000,000)] = 120,000.

223 *See* Bebchuk & Fried, *supra* note 1, at 919.

ority and the investment given the 25% tax. By so asserting, Bebchuk and Fried imply that, if the gain to the shareholders had been $90,001, the investment would have been efficient. In fact, the shareholders must perceive a gain of $200,001 before their gains outweigh all the social costs of the investment.[224]

Once again, Bebchuk and Fried compare apples to oranges. If they compared the government's claim given the investment to the government's claim assuming no investment, they would have seen that the government's loss on the investment was either $120,000 or $110,000, depending on whether full priority or the tax governs the liquidation proceeding.

E. *Summary*

In their article, Bebchuk and Fried present a series of models which suggest that sometimes security interests are efficient and sometimes they are not. The most extended model in their analysis is basically a zero-sum model. Accordingly, the implicit account of the efficient security interests is implausible. The efficiency of a security interest is a function of investment. From the zero-sum baseline, no investments are ever made. Goods never move to higher valuing users. Hence, any model based on zero-sum assumptions cannot show the efficiency of a security interest.

Sometimes however, Bebchuk and Fried suffer an investment to intrude upon their thoughts. Although, thanks to a series of errors, they fail to generate even one valid conclusion, these models are a methodological advance over the zero-sum assumptions. Accordingly, their proposal that secured lending be subjected to a 25% Pigouvian tax must be rejected as economically unjustified.

VII. NON-ZERO-SUM THEORIES

The zero-sum models have dominated and distorted the economic analysis of secured lending. For the reasons stated, the validity or worth of this literature is compromised. There are, however, some competing ideas which do *not* start from the baseline of a zero-sum game. Rather, they imply the creation of an economic enterprise in which secured lending is shown to have a constructive role.

I have already presented the theory that most closely resem-

---

224 This figure of $200,001 represents the sum of interest to Bank (either $80,000 or $90,000) and loss to the government in case of failure ($120,000 or $110,000), plus an increment.

bles real investment markets. This theory is the old-fashioned idea that mortgages deter debtor misbehavior with assets the creditors hope to remain in place in case of default.[225]

Other, less satisfactory ideas have also been presented. Often, the authors of these theories *think* they are operating within the zero-sum baseline. Besides critiquing these theories, I hope to show exactly why they are inconsistent with the zero-sum thesis.

The theories that I will discuss in this section are the "relational" theory of lending and various signaling theories.

A. *Relational Theory*

According to Robert E. Scott, security interests break the law of conservation of risk because they are tied to the tender of financial advice and similar services.[226] Like the monitoring theories just discussed and the signaling theories that will follow, the economy of scale related to tie-ins is supposed to explain security interests. Scott explains:

> Relational security agreements precommit the debtor to develop each business project optimally. The leverage gained by holding the debtor's assets hostage enables the creditor to influence business decisionmaking, particularly when the relationship is threatened by an impending default. Without security, some projects of positive present value will not be pursued, and others will be inadequately developed. In that sense, when the expected costs of substitute mechanisms exceed the expected gains from the project, it is indeed fair to say that such firms "cannot borrow without security." In addition, the global monitoring required of the relational creditor releases other creditors from the focused monitoring tasks that they would undertake in the absence of a relational creditor. The resulting cost savings thus provides additional economies that are unlikely to be achieved where such security arrangements are not permitted.[227]

While Scott endorses the zero-sum baseline of other models,[228] he also contradicts the baseline by pointing out that secured creditors supply working capital to pay the unsecured creditors. In this model, the secured and unsecured creditors are not in conflict, and

---

225 *See supra* text accompanying notes 17-26.

226 *See generally* Scott, *supra* note 15.

227 Scott, *supra* note 15, at 932-33 (footnotes omitted). These views are more recently ratified in Scott, *The Truth*, *supra* note 5, at 1453, 1455-56.

228 *See* Scott, *supra* note 15, at 904 ("[T]he insights of modern finance theory have seriously undermined the conventional wisdom.").

subsequent unsecured credit does not become more expensive.[229]

Although Scott's model reaches these sensible results, it contains a great many implausible assumptions and ultimately depends on economic irrationality. In his model, the debtor has an existing business. The debtor puts this business into hock, granting a floating security interest on all assets and promising to borrow from no other creditor. In Scott's account, the reason for doing so is always related to the *next* business adventure,[230] not the current one. Therefore, Scott has no good account of how the first business comes into existence.[231] In addition, Scott depends upon the assumption that there is, or at least might be, a subsequent business opportunity.

In Scott's model, the entrepreneur has already promised to pay supracompetitive prices for any future loans at a fixed rate. "Once the debtor's return is reduced by a *fixed repayment* to the creditor," he writes, "there is an inherent conflict of interest between the parties over the profit-maximizing investment strategy."[232] Scott describes this conflict according to the following model:

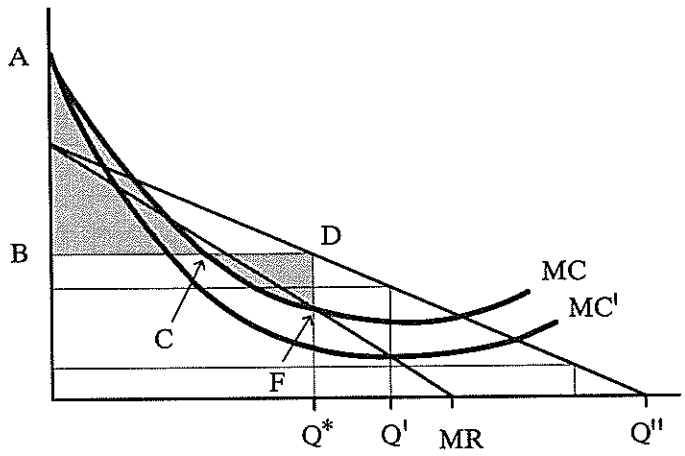

Figure Twenty-Five
Robert Scott's Model of Relational Lending

---

229 *See id.* at 932.

230 *See id.* at 936.

231 *See id.* at 913-14. For reasons that will become clear, the preexistence of another business is necessary for Scott's theory to work. It could not be adapted to account for the origin of the debtor's initial business. *See infra* notes 233-45 and accompanying text.

232 Scott, *supra* note 15, at 921.

In Figure Twenty-Five[233] the entrepreneur faces a long-term marginal cost curve and complete monopoly power over quantity produced. As the parties are free to design the enterprise any way they want, they choose to set economy of scale (the intersection of marginal cost and average cost) in order to maximize joint profits. Let us assume that economy of scale is set precisely at Q^*. This is where the debtor, at least, can best maximize his private profit, described as $CDF - ABC$.

The supracompetitive interest rates discourage production. If the debtor were free to borrow at the competitive rate, then MC would fall to MC'. Production would rise from Q^* to Q', and profit would rise accordingly. This simply illustrates the well known principle that monopoly profits increase if the marginal cost of production falls. It is this higher amount (Q') that Scott characterizes as the joint optimal profit. The debtor has no incentive to increase production from Q^* to Q'. Therefore, according to Scott, the lender needs leverage to force a rise in production to Q'.

The leverage needed to enforce the joint optimum production comes from the lender's floating security interest on the debtor's first enterprise. The lender can "turn off the spigot" on the old business and on the new business as well.[234] In other words, the lender can destroy the debtor's old business by cutting off credit and therefore has a credible threat or "leverage."[235] The threat is credible because, by implication, the costs imposed on the debtor exceed the cost of Q'. This forces the debtor to restore production from Q^* to Q'.[236]

There are several logical flaws in this model. First, the lender's optimum is not at Q'. Every $\delta Q > 0$ means an increase in

---

233 I have made some adaptations from Scott's original model, which he describes as follows:

> Let V_p represent the marginal returns from the growth prospect to the firm, I the marginal investment necessary to continue to develop the opportunity, and P the marginal interest payment to the creditor. If [the debtor] opts for equity financing, then it is obvious that the owner manager will continue to pursue the growth opportunity until $I = V_p$, thus ensuring that the prospect is fully developed. However, assume that the investment is financed through the contemplated debt contract with the First Bank. From the perspective of the owner/manager, the opportunity is now worth developing only until $I + P = V_p$.

Id. at 920. Whereas Scott attributes supracompetitive interest rates as affecting the marginal revenue of the debtor, I have portrayed them as affecting his marginal costs.

234 *See id.* at 913.

235 *See id.*

236 Scott portrays the leverage of the creditor as cutting off credit. *See id.* For this cutoff to constitute leverage, it must be the case that the debtor cannot refinance the original business with a new lender.

the lender's economic rent. In short, the lender could not care less about maximizing the joint welfare of the lender and debtor. The lender cares only for her own profits and would like to see more production. This is no mutually beneficial "relationship," as Scott supposes, but is purely a theater of exploitation in which the lender may force the borrower to work harder than the optimal amount. The limit of production is therefore probably Q''. At this point the debtor stays alive while the lender sucks maximum sustenance from the victim.[237]

Second, this model claims that leverage gained in one market can increase total profits over several markets. In short, Scott simply offers in disguised form the long-discredited claim that tie-in sales of two commodities are evil because a monopoly advantage in one market will lead to monopoly advantage in other markets. Indeed, section 3 of the Clayton Act is built on this premise. This was effectively refuted almost forty years ago, when it was shown that the monopolist could not improve her position by tying in sales, compared to simply charging the maximum price in the monopoly market. Whatever advantage the monopolist gained in the second market came only from concessions granted in the first. The monopolist was therefore equally as well off dropping the tie-in and exploiting her advantage in full in the first market.[238]

Just as the monopolist could not improve her position by tying in sales, so a lender cannot improve her position by governing production decisions in the new enterprise. The tie-in of one loan to another cannot increase the total amount of leverage the lender already has. Power in the second market is obtained only by surrendering power in the first.

There is also the question of where the monopoly power came from in the first loan market. According to Scott, this monopoly power arises from the lender's financial expertise.[239] Yet this does no more than shift the inquiry to the market for financial exper-

---

237 *Cf.* LoPucki, *supra* note 2, at 1961 n.268 (invoking spider metaphors in his theory of secured lending). Actually, there is no reason why the secured creditor could not force production beyond Q''. The secured creditor can continue production until the cost to the debtor exceeds the cost of the secured creditor's coercive power over the debtor's first enterprise. But such a strategy would eventually bankrupt the debtor. A secured party may therefore wish to temper her demands by insisting only on Q''.

238 *See* ROBERT H. BORK, THE ANTITRUST PARADOX 372-75 (1975); Ward S. Bowman, Jr., *Tying Arrangements and the Leverage Problem*, 67 YALE L.J. 19 (1957).

239 *See* Scott, *supra* note 15, at 918 ("Presumably, [the debtor] will agree to pay such a premium precisely because the arrangement encourages the exclusive financer to supply the financial management and other inputs necessary for optimal development of the prospect.").

tise. This ought to be a separate market from the market for the loan. The question arises: Why isn't *this* market competitive, and what advantage is gained by tying this commodity to the new loan?[240]

It could always be the case that, in a competitive credit market, a debtor surrenders leverage in exchange for lower interest rates now. But this artificial creation of anticompetitive leverage becomes rational only if there is an information asymmetry. That is, the debtor believes no good opportunities will arise, and the lender does. As the debtor is in control of her own creative faculties, the lender is foolish indeed to give discounts on such a basis, especially when the lender would be lending at rates substantially below the market.

Another difficulty in the origin of the lender's leverage is the fact that the debtor can escape the lender's monopoly power over future investment through equity financing.[241] Thus, the lender is betting, not on the existence of future new ideas, but on the absence of equity financing. As the probability of these latter factors shrinks, so does the lender's present discount. And as the discount shrinks, so does the creditor's later leverage.[242]

Finally, as the debtor's existing business grows stronger, whatever difference between the lender's introductory rate and the rate a refinancing lender would charge shrinks, thereby limiting the leverage that was initially created. Thus, the premise that secured credit depends upon milking monopoly profits out of a second enterprise through leverage over the first enterprise is not a promising theory to explain the rationality of secured credit. It is

---

240 A similar analytical error appears in monitoring theory, where it is widely assumed that the market for monitoring services and for loans is the same market. This must not be so easily assumed. The services could be sold separately. *See supra* text accompanying notes 142-67.

241 Scott himself points out the deleterious effect of equity financing on his theory. *See* Scott, *supra* note 15, at 936.

242 Scott hypothesizes that perhaps debtors are irrational:

> While standard economic theory maintains that debtors would prefer to retain all their choices including the choice subsequently to misbehave, a precommitment analysis suggests that such security may simply be some debtors' method of protecting their present decisions against future temptations.

Scott, *supra* note 15, at 928-29. Indeed, irrationality greases the wheels of many an economic model that can't otherwise work, but, to follow Scott's reasoning, one must believe that a lender will bet good money today that the debtor will have a good prospect tomorrow, and that the lender will find out about it. Otherwise, the lender gives a discount today (creating the holdout power over the existing business) for very little prospect of a return. Yet the lower the discount given today, the lower the leverage if the lender should find out later that a good business opportunity exists.

based upon the irrationality of economic actors and upon outmoded antitrust economics.

It is possible to guess what fuels Scott's theory. As is widely known, security agreements often make unauthorized borrowing an event of default. Secured creditors apparently do not want competing lenders around.[243] But it is not necessary to assume from this anti-borrowing covenant that the secured creditor expects future monopoly profits from new projects. It is also possible to view these covenants as increasing the power of the secured creditor to block misbehavior by the debtor—misbehavior that might threaten the secured creditor's existing position. Indeed, much debtor misbehavior precisely consists of subsequent borrowing, and it is not surprising that existing creditors would like to control it.

Furthermore, as Frank Buckley points out, Scott's model does not really go to security interests at all. It goes to creditor leverage in general. There is nothing unique about a security interest that allows a creditor to tie two loans together. A powerful unsecured creditor could make the tie-in loan just as easily. If anything, a security interest is simply a special case of what Scott theorizes about in general.[244]

To summarize, a debtor need not pay supracompetitive prices for either the loan or advice in a competitive credit market. Therefore, Scott's model is one whose domain is uncompetitive credit markets.[245] Credit is likely to trade in highly competitive markets, since the product is homogeneous. Scott's theory is too limited in its domain to be of much use and depends upon the economic irrationality of market participants.

B. *Signaling*

Within the legitimate domain in which the Modigliani-Miller thesis operates, corporate finance economists have toyed with signaling theory to break the Modigliani-Miller irrelevance thesis. One signaling theory, for example, posits that an all-equity firm that is underpriced can signal its own optimism about the future by issuing debt or redeeming shares.[246] Capital markets will then

---

243 *See id.* at 951.

244 *See* Buckley, *supra* note 92, at 1445-46; *see also* Mann, *supra* note 25, at 656.

245 Indeed, Scott warns readers that his or any other model *can* be one of general application. *See* Scott, *supra* note 15, at 912.

246 *See* Paul Asquith & David W. Mullins, *Signalling with Dividends, Stock Repurchases, and Equity Issues*, FIN. MGMT., Autumn 1986, at 27; Stephen A. Ross, *The Determination of Financial Structure: The Incentive-Signalling Approach*, 8 BELL J. ECON. 23

learn that management thinks the equity shares are undervalued and will respond accordingly. Another theory states that a constant dividend policy is a signal. Given the fact that it is expensive for firms to finance steady dividend streams when income falls below the present value of the income stream, shareholders are supposed to respond to such dividend policies by raising their estimate of equity's worth.[247]

Signaling theory, however, has had a controversial track record because it suffers from a boundary problem. What passes as a signal in the models also turns around and affects the firm itself. That is to say, debt or a dividend policy reduces the amount of retained earnings and hence affects the value of the firm. Such policies do not merely report firm value. They change it.[248] This is not to say that changes in firm value are not highly informative. But given the change in V, such theories cannot be viewed as pure signaling theories, but rather as a mixed theory of some kind.[249] For this reason, some theorists broadly reject signaling theory in favor of an "agency cost" theory. According to agency cost theory, debt or dividends serve to divest managers of liquid wealth so that they cannot steal it; knowing this, capital markets will respond favorably.[250]

(1977).

247 *See* Sudipto Bhattacharya, *Imperfect Information, Dividend Policy, and the "Bird in the Hand" Fallacy*, 10 BELL J. ECON. 259 (1979).

248 *See* Daniel B. Bogart, *Games Lawyers Play: Waivers of the Automatic Stay in Bankruptcy and the Single Asset Loan Workout*, 43 UCLA L. REV. 1117, 1189-90 (1996).

249 An example of a *pure* signaling theory is games involving wage contracts and education levels. Education is taken to be a signal of worker productivity. That is, productive workers find school less painful than unproductive workers. Therefore, employers look to education as a pure signal of this productivity. Employees therefore have an incentive to invest in the signal. Notably, education itself has nothing to do with the productivity of the worker—rather insulting to the education industry, but illuminating to explain why investment banks hire poetry majors. For a description of such games, see RASMUSEN, *supra* note 68, at 210-15.

In describing the parameters common to all signaling games, Robert Gibbons writes:

> 1. Nature draws a type t_i for the Sender from a set of feasible types $T = \{t_1, \ldots t_i\}$ according to a probability distribution $p(t_i)$, where $p(t_i) > 0$ for every i and $p(t_i) + \ldots + p(t_i) = 1$.
>
> 2. The Sender observes t_i and then chooses a message $M = \{m_1, \ldots m_j\}$.

ROBERT GIBBONS, GAME THEORY FOR APPLIED ECONOMISTS 183 (1992). Yet, because security interests disable misbehavior by the debtor, a security interest is tantamount to the *debtor*, not nature, making the first move. In other words, type and message are not distinguishable in the signaling models to be discussed here.

250 *See* Zohar Goshen, *Shareholder Dividend Options*, 104 YALE L.J. 881, 887-93 (1995). The indistinct boundary between mere signaling and investment policy has an analogue in the philosophy of language. Thus, signaling is what J.L. Austin would have called a "constative" theory of language, according to which a preexisting reality exists,

Academic lawyers have also tried to illuminate the cross-elasticity between secured and unsecured credit. Not surprisingly, the signaling theories applied to secured lending face the same boundary problem. Recall again the implicit definition of secured credit that the zero-sum literature usually adopts. Secured credit is risk-free and can be withdrawn effectively, thereby disciplining managers to choose projects wherein *C*, the amount of collateral, is the lower limit of firm variance.[251] So viewed, secured credit is no mere signal but becomes the very foundation of the firm's financial structure.

In Alan Schwartz's discussion of signaling, this boundary problem is readily apparent. Schwartz writes:[252]

> A security interest might be . . . an effective signal. Security interests restrict future borrowing opportunities, give secured creditors greater leverage over firm behavior, and make it more difficult for a firm to reschedule debts in the event of hard times. A firm willing to encumber its assets is, thus, "signaling" that, in its view, its prospects justify these potential costs. Further, signaling costs apparently vary inversely with project quality because they are partly a function of the likelihood that the firm will experience financial difficulty. A firm likely to earn high profits may worry little about the future restrictions on its ability to borrow that a security interest may create or about the power that a security interest gives to a creditor to influence firm decisions if no profits are realized. Firms expecting not to do well, on the other hand, may regard the expected costs of issuing secured debt as high because those costs could well be incurred. The apparent property of secured debt to communicate accurately to creditors a firm's true estimate of its expected earnings indicates that the existence of secured debt may be explained as a signaling phenomenon.[253]

In this model of security interests as signals, security interests transfer power from the debtor to the creditor. This surrender of

---

and language simply reports it. "Agency cost" theory recognizes that the preexisting reality bears a dialectic relationship with language. This is what Austin would have called "performative" language. That is, the mere fact that language is spoken alters the operative reality. *See* J.L. AUSTIN, HOW TO DO THINGS WITH WORDS (J.O. Urmson & Marina Sbisa eds., 2d ed. 1975). What Goshen proposes is that dividends and the like are performative, not constative, theories.

251 *See supra* text accompanying note 38.

252 The following remark, that "[s]ecurity interests restrict future borrowing opportunities," contradicts a great many assumptions that appear elsewhere in Schwartz's article. This contradiction will be discussed *infra* text accompanying notes 259-60.

253 Schwartz, *supra* note 10, at 15; *see also* Buckley, *supra* note 127, at 264-65; Schwartz, *supra* note 178, at 1404-06.

power is taken as a "signal" that the debtor expects the power will never be used. While this proposition can hardly be denied, it is also true that the signal radically changes the nature of the value of the firm. The security interest—defined as the instantaneous ability to pull capital out of the firm—serves to set the lower limit of variance at *C*. Thus, however *informative*, the security interest is also *transformative* of firm value.[254]

Signaling theory therefore blurs notions of communication and power. Other objections may be posed as well to the use of signaling theory to analyze the cross-elasticity between secured and unsecured credit. Given that cross-elasticity is the question, it follows that firms too risky to issue secured debt will issue unsecured debt instead. Schwartz's theory therefore predicts that the unrisky firms obtain secured debt and the risky firms obtain unsecured debt—a most counterintuitive prediction.[255]

Signaling theory depends upon an inverse correlation between firm quality and the cost of the security interest. Accordingly, these two factors—quality and cost—bear close scrutiny. Firm quality—that which a firm wishes to signal—is defined by Professor Schwartz as "the outcome mean and variance,"[256] or what we have been calling firm value (*V*). The security interest therefore "signals" (but really "establishes") the lower limit of variance as *C*.

The second factor is the cost of establishing *C* as the lower limit of *V*. If *C* is the lower limit of variance, then a firm gives up the opportunity of changing the variance in order to impose uncompensated risk on the creditors. In common terms, a security interest disables the firm from stealing from creditors to benefit

---

254 Professor Triantis attempts to solve the boundary problem between signaling theory and agency cost theory by pointing out that a creditor faces two kinds of risk—a risk that is unconnected with debtor misbehavior and a risk that stems entirely from debtor misbehavior. In the case of exogenous risk, the debtor knows more than the creditors. For this, security interests are useful signals, and the better debtors will issue them. In the latter case—the case of endogenous risk of moral hazard—security interests disable debtors from alienating property, and bad debtors will issue them.

Thus, security interests can mean one of two very different things—debtors are good or debtors are bad. There is no way for the creditor to interpret which of the two messages is conveyed. Nevertheless, Triantis does not think that the agency cost meaning radically disrupts the signal: "[T]rade-off and interaction" are possible, he writes. Triantis, *supra* note 16, at 257. But this must be severely doubted. If the signal means so radically different things, how can a creditor infer the correct meaning?

255 This is oft pointed out. *See* Mann, *supra* note 25, at 629; Triantis, *supra* note 16, at 256 ("To many observers, this signaling hypothesis appears to be counterintuitive; their experience suggests that lower-quality borrowers are compelled to grant collateral to their lenders.").

256 Schwartz, *supra* note 10, at 14.

management or the equity holders. Hence, a low quality firm is simply one that values highly its opportunity to steal—broadly defined as changing V to the prejudice of creditors.[257] Notice, then, that these two factors, "quality" and "cost," blend together. The cost is the loss of an opportunity to steal, and the propensity to steal becomes the chief criterion of firm quality. In short, the distinction between cost and quality is a false one.[258]

1. *Signaling and Modigliani-Miller Assumptions*

Although signaling theory in corporate finance economics is offered to defeat the Modigliani-Miller irrelevance hypothesis regarding debt-equity ratios, it is not clear whether signaling theory coheres with the zero-sum baseline that usually grounds theories of secured lending. As we saw earlier, the Modigliani-Miller baseline, when translated into the secured lending critique, entails absurd and fantastic predicates.[259] At this baseline, all debtors are insolvent through excess borrowing, and there is not enough collateral to go around. Without these features, it could not have been true that security interests were irrelevant to the debtor's total debt burden.

To its credit, signaling theory does not necessarily invoke the zero-sum baseline. For example, it is capable of dealing with investment in start-up enterprises. The zero-sum baseline is not. A debtor might have only a single creditor, who contemplates the choice between a secured or unsecured loan. In the signaling models, a firm is not faced with allocating scarce collateral among competing creditors. In fact, signaling theory requires none of the implausible assumptions of the zero-sum baseline. Nevertheless, signaling theory fails to distinguish between the pure signal of a firm's preexistent quality and the transformation of the firm into one that is bonded against misbehavior. As a result, the theory is inferior to the old fashioned notion that security interests dissipate risk by inhibiting debtor defalcation.

---

257 *Accord* Scott, *supra* note 15, at 928 n.90. Thus, in Alex Johnson's account of secured lending, a real estate mortgage "signals" to the mortgage participation market that the lead lender's secured claim is of high quality. *See* Johnson, *supra* note 126, at 356-59. Is it not the mortgage *itself* that gives the claim its high quality?

258 This critique may also be leveled at virtually any of the signaling theories within corporate finance economics. If these models divest management of liquid assets, the firm's quality increases precisely because the firm has undertaken the "cost" of removing these funds from the control of management.

259 *See supra* text accompanying notes 32-60.

2. *High Going Concern Value*

One scholar, George Triantis, makes a much different suggestion about signaling.[260] According to Triantis, debtors whose assets have high exchange value relative to use value have a greater incentive to misbehave than the converse—debtors whose assets have low exchange value compared to use value.[261] Therefore, a debtor whose assets are extremely firm-specific can issue a security interest more cheaply than other debtors. For such debtors, the lure of misbehavior is much weaker, and they issue security interests much more easily. When a debtor tenders a security interest, the creditor knows that the debtor perceives a great amount of net going concern value in her assets.

On this view, signaling does not represent debtor quality at all.[262] Rather, it signals only a large ratio of going concern value to liquidation value.

Triantis's signaling theory depends on the premise that lenders cannot discern debtor quality, but no lender should have trouble ascertaining the scrap value of collateral. Undoubtedly the opposite is true; commercial lenders investigate the liquidation value of the collateral before they take the security interest. Furthermore, Triantis's theory would suggest that security interests would be rare in, for example, the commercial real estate market, where the ratio of liquidation value to going concern value approaches one. Yet this is precisely where security interests are ubiquitous. Triantis's signaling theory, then, appears to have no predictive value.

3. *Secured Credit As a Signal of Bad Quality*

A very brief signaling theory is presented by Barry Adler.[263] Conceding that debtors rationally issue security interests,[264] Adler tries to account for the existence of corporate unsecured credit.

---

260 *See generally* Triantis, *supra* note 16.

261 *Id.* at 254.

262 Triantis does not view his own theory this way. *See id.* at 255 ("[T]he issuance of secured debt may be a signal of the quality of the issuing firm because the implicit costs to the firm . . . vary with the quality of the firm's prospects.").

263 *See generally* Adler, *supra* note 16.

264 As the current theories of security interests are so contradictory, it is disappointing that Adler does not clue us in on which of the theories he thinks are correct. All we learn is: "On close analysis, current theories explain well that secured credit efficiently reduces management's opportunity to take excessive risks with a debtor's assets." *Id.* at 74. Why are not these displaced risks transferred to subsequent unsecured creditors, as in the other theories? While Adler's comment is ultimately meritorious, he has not clearly explained whether or not he has abandoned the Modigliani-Miller baseline.

His theory: Unsecured credit signals managerial quality to the equity market. Secured credit signals a propensity to embezzle. This latter signal usefully causes shareholders to sell or to throw managers out.[265]

It is a truism of corporate finance, however, that shareholders *want* managers to embezzle from creditors—but for the benefit of shareholders.[266] A security interest may therefore mean that managers are bad *or* that managers are excellent. Adler presents no theory by which the shareholders can assign one meaning to the exclusion of the other.

There is also this problem: Suppose a security interest clearly signals that the credit market fears embezzlements. The security interest itself *disables* embezzlements.[267] Shareholders should count this as good, not bad, and therefore should be delighted to see security interests. In other words, security interests are never just a signal. They alter the preexisting power management has to misbehave.[268] For these reasons, Adler's signaling theory must be rejected as illogical and contradictory.

C. *"A Theory of Loan Priorities"*

The greatest champion of the zero-sum baseline has been Alan Schwartz. Yet, in an important article published in 1989, Schwartz constructs an ideal priority system, based on consulting what most creditors want. The premise underlying *A Theory of Loan Priorities*[269] is that, if debtor-creditor law matches what most creditors want, then drafting costs are saved and all credit becomes cheaper.[270] Meanwhile, anyone who does not like the prevailing default rules can simply contract out of them.[271]

---

265 *See id.* at 93 (stating that security interests signal "a management attempt to camouflage self-interest or incompetence").

266 *See, e.g.*, Robert K. Rasmussen, *The Ex Ante Effects of Bankruptcy Reform on Investment Incentives*, 72 WASH. U. L.Q. 1159, 1173 (1994).

267 *See* Goshen, *supra* note 250, at 896-97 (making this claim about debt in general).

268 *See supra* text accompanying notes 22-23.

269 Alan Schwartz, *A Theory of Loan Priorities*, 18 J. LEGAL STUD. 209, 226-27 (1989).

270 *See id.* at 249.

271 Recent work by Ian Ayres and Robert Gertner has undercut the premise that law should give most contracting parties what they want and let the minority contract out of the majority rule. According to Ayres and Gertner, the slogan "give the majority what they want" is based on the controversial empirical premise that all people have equal drafting costs. If, for example, a minority of people have less knowledge about and ability to draft, then give the *minority* what they want, because the aggregate drafting costs from which the minority is relieved exceeds the drafting costs imposed on the majority. *See* Ian Ayres & Robert Gertner, *Filling Gaps in Incomplete Contracts: An Economic Theory of Default Rules*, 99 YALE L.J. 87 (1989); *see also* Paul M. Shupack, *Defining Purchase*

According to this theory, most debtors want to give security.[272] In Schwartz's past work, debtors don't want security because the debtor cannot benefit, in light of the zero-sum baseline. Indeed, Schwartz won many victories over opponents who attempted to break the zero-sum baseline by asking why, if security interests are so desirable, don't all debtors issue security interests, until the security is exhausted? Now it appears that is precisely what most debtors want to do. Though Schwartz does not explain *why* they want to issue security interests,[273] it must be because it is rational for them to do so. That is to say, security must, after all, lower the debtor's aggregate cost of borrowing.

Meanwhile, the Modigliani-Miller thesis is not expressly referred to in Schwartz's 1989 article. If Modigliani-Miller assumptions were at work, then securing the first creditor would be useless because subsequent unsecured creditors would charge the debtor for all the added risk that the security interest earlier eliminated. The debtor would not "want" secured lending for the first loan.

Yet in 1994, Schwartz apparently asserted that his theory of

Money Collateral, 29 IDAHO L. REV. 767, 778-79 (1992) (applying Ayres-Gertner against the Schwartz thesis).

272 Schwartz's thesis receives an odd reading in Adler, *supra* note 16, at 80-81, 84-85. According to Adler, Schwartz opposes secured lending, and his mode of opposing it is to give the first lender priority over all subsequent creditors:

> [Schwartz] sees much of secured credit as an anomaly. As a result, although he does not go so far as to recommend secured credit's abolition, he proposes, with exceptions not relevant here, to subordinate a creditor's interest to that of any earlier creditor unless the later creditor is a secured-purchase-money lender.

Id. at 84-85. In other words, the automatic priority of the first creditor is not itself a security interest; rather, it blocks the security interests of subsequent creditors. Yet it must be admitted that the *first* creditor in Schwartz's system is herself a secured creditor—at least in the sense of having a bankruptcy priority and the right to repossess collateral. Also, it is routine that a first security interest is always an impediment to the second—by definition. Accordingly, Schwartz does not oppose but embraces security interests.

273 Schwartz's evidence for the proposition that most debtors want to issue security interests is peculiar. The thrust of the argument seems to be this, as best I can follow it: Debtors who borrow will do so on the basis of sound projects, but they may wish to borrow again. Debtors know whether their future projects will be good or bad, but the creditors are in the dark. Good debtors will signal their good prospects by promising they will not borrow. They do this because they know that, if a good opportunity arises later, they can get the first lender to waive the anti-borrowing covenant. Bad debtors will also agree to the covenant as well. Because the covenant brings a lower interest rate today, bad debtors will take the savings today and defer higher interest on the second project later. Therefore, both good and bad debtors give the covenant. And, since every debtor—good or bad—wants the covenant, the covenant should be transformed by positive law into an automatic security interest on behalf of the first lender. From the wreckage of a signaling equilibrium emerges the insight that *every* debtor wants to issue security interests. *See* Schwartz, *supra* note 269, at 235-41.

loan priorities is consistent with Modigliani-Miller conditions.[274] Of his 1989 article, he writes:

> I later came to see that a firm could increase its value by granting its initial financer the highest priority rank if (1) potential lenders were imperfectly informed about the quality of the projects a firm may take and (2) the firm had no nonconsensual claimants.[275]

This passage seems to be saying that Schwartz's 1989 article is indeed consistent with Modigliani-Miller assumptions, but the mode of reconciliation is most unclear. One of the theories for allocating security interests at the zero-sum baseline was that creditors with uncertain knowledge might be allocated security interests when their view of the risk was unnaturally high. Subsequent creditors with better information would then supply the subsequent unsecured credit.[276] Perhaps this is what Schwartz means. This theory, however, requires two groups of creditors—those who overestimate the firm's riskiness and those who do not. If the security interest is given to the first group, then the debtor in the zero-sum baseline saves interest expense later when borrowing from the second group. If all creditors are in the same boat with regard to their knowledge, the debtor gains nothing by giving a security interest to the first lender.

The above-quoted passage may also mean that secured lending is rational to the equity holders when the first lender takes the security interest and the subsequent lenders are required to give unsecured credit.[277] If this passage is supposed to mean that security interests are rational because a debtor can still export costs to subsequent uninformed creditors or by committing torts, then the "ideal" priority system that Schwartz describes is founded upon theft, not economic efficiency.[278]

The other possibility is that Schwartz has indeed waived the zero-sum baseline. In such a case the ideal priority system is one that creates a lien for a single dominant lender. Although

---

274 *See* Schwartz, *supra* note 5, at 2079-80.

275 *Id.* at 2080 n.13.

276 *See supra* text accompanying notes 72-73.

277 It further seems to say that this possibility depends upon the non-existence of nonconsensual creditors—e.g., taxes or torts. On this latter point, the opposite proposition seems more conducive to exportation of costs. That is, where a security interest leaves the debtor free to take risks at the expense of tort victims, the debtor effectively increases the present value of its equity interest in the firm.

278 Ironically, Schwartz himself, in the same article, criticizes other scholars who "do not seriously consider inefficiencies, arising from externalities and asymmetric information." Schwartz, *supra* note 5, at 2086.

Schwartz does not mention dissipation of the risk of debtor misbehavior, that premise is at least consistent with his proposal.[279]

Finally, in 1997, Schwartz issued yet a new theory of secured lending. Divorced from jargon, Schwartz now believes nothing more complex than this: security interests eliminate the risk of debtor misbehavior.[280] This is nothing but the ancient insight that Schwartz himself thought to displace by invoking Modigliani-Miller assumptions twenty years ago. In this newest theory, Modigliani and Miller are nowhere in evidence. Neither do we have any attempt to reconcile Schwartz's earlier theories with his newest one. Nevertheless, the article makes clear that Schwartz has come full circle and agrees with the very theories that he viewed as simplistic and unsophisticated twenty years ago.[281]

CONCLUSION

Theories of cross-elasticity between secured and unsecured credit are failures, when they operate within the confines of the Modigliani-Miller irrelevance hypothesis, because they try to break correlations that do not exist. Clearly an economic theory of secured lending must start from some baseline in which debtor misbehavior is possible, debtors are not always insolvent, and secured parties are concerned about whether the debtor's cash flow is adequate to cover debt service.

In an earlier article, I put forth a simple model which did not ground itself in the premises of Modigliani and Miller.[282] This theory concerned itself primarily with the possibility that the debtor will not voluntarily pay the debt service a loan agreement calls for. Starting from the premise that debtor misbehavior exists, I showed that an economic enterprise might be founded and sustained by use of secured lending—without any necessary exportation of costs

---

279 James Bowers reads Schwartz as disavowing the zero-sum game in his 1989 article, implying that it is a waste of time to criticize zero-sum assumptions, as everyone knows they are wrong. *See* Bowers, *supra* note 19, at 2215-16 (complaining of a "curious impulse to save damsels no longer in distress"); *id.* at 2220. Bowers overlooks Schwartz's own endorsement of the zero-sum model in the very issue of the *Virginia Law Review* in which Bowers published his article. *See* Schwartz, *supra* note 5, at 2080. Bizarrely, in the rest of his article, Bowers proceeds (ineffectually) to defend zero-sum assumptions in economic models of secured lending.

280 *See generally* Schwartz, *supra* note 178. Schwartz does not use the phrase "debtor misbehavior." He rather uses the phrase "debt dilution"—acts by the debtor that make an unsecured claim less valuable.

281 Schwartz refers to this simple theory as "relatively neglected." *Id.* at 1412. In fact, it is the theory that was commonly assumed to be true before the Modigliani-Miller irrelevance hypothesis was introduced to confuse the matter.

282 *See* Carlson, *supra* note 8.

to subsequent unsecured creditors. Whether the enterprise was in fact efficient was shown to be an empirical question. But, at least as a matter of theory, it became clear that security interests were *conceivably* consistent with efficiency. In contrast, if I had started with Modigliani-Miller, I would have faced a burden of proving why security interests do *not* export costs to inevitably existent or subsequent unsecured lenders. By simply ignoring Modigliani-Miller assumptions, I had no such burden. In my model, unsecured creditors either never came into existence, or they were short-term creditors paid from the loan proceeds supplied by the secured creditors.

This theory worked in tandem with Professor Lynn LoPucki's theory of unsecured credit.[283] Briefly, LoPucki suggests that institutionalized unsecured credit exists in two forms. First, there is trade credit, which he colorfully describes as cash surfing.[284] These short-term creditors, to whom my own theory referred, extend unsecured credit on the assumption that the secured creditor will supply the cash to pay them. So conceived, these creditors enjoy a symbiotic relationship with secured credit.[285] If LoPucki had started from Modigliani-Miller assumptions, he would have been forced to assume that secured and unsecured creditors are strictly adversarial in their relationship.

The second form of unsecured credit is the institutional debt issued by very large corporations. This institutional debt frequently involves covenants regulating debtor behavior. LoPucki explains the existence of this debt by the pure quantity of the unencumbered assets the company owns. In essence, these companies simply cannot steal the assets fast enough to prevent unsecured creditors from taking effective action against defalcations. Because these firms are thought to pose very little risk to creditors, the creditors are happy enough to dispense with security inter-

---

283 *See* LoPucki, *supra* note 2.

284 *See id.* at 1924-31.

285 James Bowers denies symbiosis between secured and unsecured credit. If they were symbiotic, he reasons, then priority contests between secured and unsecured creditors would never arise. *See* Bowers, *supra* note 19, at 2218 n.16. This remark is poorly reasoned. Secured lending must be conceived as a long-term relationship. A secured lender supplies the cash that gets suppliers paid. So long as the relationship thrives, it is a symbiotic one. But should the secured lender cut off credit, and should the debtor fail to warn unsecured suppliers of goods and services, unsecured claims will come into existence, and hence courts will have occasion to explore priorities. In other words, a relationship may be symbiotic at one time, but it may go sour at a later time. Here Bowers suffers from zero-sum assumption, which insists that secured lending is a one-time investment decision and not a relation over time.

ests.[286]

These theories, taken together, suggest that secured lending can exist without any necessary ethical difficulty. Yet this is not to say that ethical questions will never arise when a firm fails. At this point, the critique of secured lending is not so much an economic question as a moral one. Thus, LoPucki is highly critical of secured credit. LoPucki maintains that, in bankruptcy, trade credit —the cash surfers—crashed because the secured party terminated cash flow without sufficient warning. In contrast, Steven L. Harris and Charles W. Mooney hold that the secured creditor is not automatically to blame for the debtor's misrepresentations to the cash surfers.[287] They strongly support the regime of secured lending on libertarian grounds, and on the observation that debtors have ample opportunity to replicate their bad behavior through alternative institutions, such as bankruptcy-remote subsidiaries, sale-leasebacks and the like.

This debate is exactly the mode by which secured lending's future must be decided. Ultimately, the questions are moral—not economic or even empirical—though, to be sure, empirical work will always be a valuable ally in a prudential dispute over social institutions.

Where does this leave the economic critique of secured lending? First, it is apparent that the so-called "puzzle" of secured lending was, like Macbeth's dagger, a false creation proceeding from heat oppressed brains. Economic theory confirms that security interests do not *necessarily* export costs to the public.[288] The

---

286 These are the firms of which Merton Miller writes in discounting the significance of bankruptcy costs. *See* Merton H. Miller, *Debt and Taxes*, 32 J. FIN. 261 (1977) (theorizing that large corporate debtors pose minuscule bankruptcy risks to their creditors). In more recent years, institutional creditors have discovered that their covenants have not always protected them from leveraged buyouts, which involve secured lenders taking senior positions as to the company assets. These tactics may call into question the wisdom of unsecured institutional debt, though, to be sure, the custom endures, and LoPucki has told a coherent story justifying its existence.

287 *See* Steven L. Harris & Charles W. Mooney, Jr., *A Property-Based Theory of Security Interests: Taking Debtors' Choices Seriously*, 80 VA. L. REV. 2021, 2024 (1994).

288 By way of a final criticism of Schwartz's theory of secured lending, Schwartz worries that, because of the law of conservation of risk, security interests might serve only to export costs to the public. He suggests that if this is so, security interests should be subordinated in bankruptcy. He rejects, however, the idea of a Pigouvian tax on secured credit—that is, some sort of regulation that simply makes secured credit more expensive to issue. Schwartz writes that such a strategy "is unwise. . . . [C]reditors and firms are likely to want a good deal of security even at higher cost levels, as they did before the code. Reducing the costs to many parties of doing what they would do anyway thus will produce some gains." Schwartz, *supra* note 10, at 33-34. It is true that reducing the transaction costs of secured credit will produce some gains *for debtors and the secured creditor*. But the only

theory showing this is quite unproblematic, once zero-sum assumptions are dropped. Yet economic theory does no more than to suggest possibilities. If security interests are *possibly* efficient, they are not necessarily so, as a group or class. The question cannot be left at a level of crude rule utilitarianism. What appears to be a single phenomenon is in fact a multivariant one. There is not a single institution of secured credit, but thousands, each with its own dynamic and potential for abuse.

This leads to the view that future research should largely be empirical, not deductive. But a future reliance on empiricism equally suggests that the aspirations of welfare economics should be dropped. Welfare economics strongly claims that ethics might be reduced to empirics. That is, it claims that it is possible to know whether legal reform increases or decreases utility in the world. Such a pretense to universal knowledge is extremely problematic, however.[289] Economists usually proceed by identifying market imperfections, often suggesting that, if the market imperfection is eliminated, social benefit must follow. But there is no logical reason to believe this; the practice is quite illegitimate. According to the classic statement of Richard G. Lipsey and Kelvin Lancaster:

> It is well known that the attainment of a Paretian optimum requires the simultaneous fulfillment of all the optimum conditions. The general theorem for the second best optimum states that if there is introduced into a general equilibrium system a constraint which prevents the attainment of one of the Paretian conditions, the other Paretian conditions, although still attainable, are, in general, no longer desirable. In other words, given that one of the Paretian optimum conditions cannot be fulfilled, then an optimum situation can be achieved only by departing from all the other Paretian conditions. . . .
>
> From this theorem there follows the important negative corollary that there is no *a priori* way to judge as between various

question can be whether it produces *social*, not private, gains. Reducing transaction costs does not necessarily produce wealth gains—only wealth transfers. *See supra* text accompanying notes 61-65.

289 Jeanne Schroeder has shown that "perfect knowledge," in the context of markets, implodes the very distinction between producers and consumers and between persons and commodities. *See* Schroeder, *supra* note 21. This same critique can be applied to welfare economics. "Perfect knowledge" implies an immediacy with the object-world that obliterates self-consciousness and, with it, the very possibility of welfare economics. The knowledge required for welfare economics to work spells its end. This, incidentally, was foretold in the insight that perfect markets have abolished time and space, the very conditions for the possibility of phenomena. *See* KANT, *supra* note 22, at 24; *supra* text accompanying notes 19-22.

> situations in which some of the Paretian optimum conditions are fulfilled while others are not. Specifically, it is *not* true that a situation in which more, but not all, of the optimum conditions are fulfilled is necessarily, or is even likely to be, superior to a situation in which fewer are fulfilled. It follows, therefore, that in a situation in which there exist many constraints which prevent the fulfillment of the Paretian optimum conditions, the removal of any one constraint may affect welfare or efficiency either by raising it, by lowering it, or by leaving it unchanged.[290]

This passage, taken seriously, suggests that a priori welfare economics is not a promising possibility for further research. The problem of knowledge is utilitarianism's insurmountable obstacle. Welfare economics cannot give *scientific* guaranties of legal reform, simply because the normative implication of doing away with (or adding to) transaction costs is never clear.

But this is not to say that legal reform itself is an impossible or meaningless task. It is only impossible as a matter of *science*. Prudential analysis—using cost-benefit analysis in a modest way—is still possible and desirable. It is the real way that public policy has been made from time immemorial. The law and economics movement in the law schools has undoubtedly improved prudential sophistication. Price theory is a marvelous mind-clearing exercise. But, for the reasons described by Lipsey and Lancaster, it can never solve moral questions.

A prudential context is a far more realistic one in which to discuss policy directions. Indeed, it is more scientific than the sci-

---

290 Richard G. Lipsey & Kelvin Lancaster, *The General Theory of Second Best*, 24 REV. ECON. STUD. 11, 11-12 (1956). James Bowers calls this a "know-nothing syllogism." Bowers, *supra* note 19, at 2222. It is perhaps better called a "know-nothing-a-priori-syllogism"—a claim that all economic propositions are empirically rather than logically true.

Ironically, Bowers also writes: "[A]t least some welfare economists think that, in view of the formidable information costs required to formulate second-best policies for many sectors, the rational course is to pursue first-best recommendations in order to achieve third-best outcomes in those sectors." *Id.* at 2228-29. In effect, this "third best" position asserts that no knowledge is to be preferred to incomplete knowledge, because, otherwise, welfare economics would be struck dumb. So conceived, it is not Lipsey and Lancaster who "know nothing," but those welfare economists who ignore this point in order to preserve their discourse.

> Dean Scott has recently recognized the problem of second best considerations:
> Any recommendations to policymakers must account for the fact that secured credit is a regime of offsetting effects—some efficiencies and some inefficiencies—in a combination that is largely unknown and is likely to remain an uncertainty for the foreseeable future. This debate thus reduces to a central empirical question, the answer to which is currently unknown: What are the relative values or [sic] these two effects?

Scott, *The Truth*, *supra* note 5, at 1462 (footnote omitted).

ence of welfare economics, to the extent its self-conception more accurately describes the only way questions of public policy are really ever decided. In such a context, a panoply of values must be brought to bear on the subject of legal reform—in a qualitative, not a quantitative, way. Legal reform should be governed by an empirically informed prudential program, wherein considerations of honest dealing and fairness compete with full or even superior dignity with utilitarian calculus. Markets are no doubt a noble invention—and not just for economic reasons. If policy makers aim for a decent and fair market structure—ever ready to intervene when prudence dictates—they cannot go far wrong in their pursuit of the proper commercial law regime. We can never be confident whether the public—set loose in the market place—will respond by creating or destroying wealth. But markets can provide an alternative public good—a theater of self-actualization and mutual respect.[291] This deontological goal is far more important than the elusive quantification of public good that law and economics vainly pursues.

---

291 This is the theme of JEANNE L. SCHROEDER, THE VESTAL AND THE FASCES: HEGEL, LACAN, PROPERTY, AND THE FEMININE (1998) (defending market transactions from a Hegelian perspective).